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ABSTRACT

This report discusses the existence and prevention of major health and safety risks for children in day care and makes recommendations for the Federal Interagency Day Care requirements (FIDCR) concerning health and safety. Section I describes varying concepts of risk related to probability and to possibility of adverse events, and discusses assumptions about risk made by insurance, legal and lay sources. Section II presents evidence which delineates the major risks to health and safety of young children, in terms of both frequency of incidence and potential severity of outcome. Risks discussed include motor vehicle and pedestrian accidents, fires and burns, falls, suffocation and ingestion, drowning, infectious disease, malnutrition, dental disease, lead absorption, hearing loss, developmental and speech disabilities, allergies, vision problems and genetically transmitted disease. Section III discusses four internal program characteristics and four outside resources which help prevent or minimize risks described in section II. Later sections survey current health and safety practices in day care, discuss three options for a federal role in minimizing risks, and offer recommendations pertaining to federal regulation and areas for further research. (Author/CM)

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Final Manuscript

Concept Paper On

Health and Safety Issues

in Day Care

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TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC) AND USERS OF THE ERIC SYSTEM."

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I

PREFACE

This book began as a paper to approach the notion of federal regulation of health and safety in day care from the perspective of major risks for children, the possible presence and avoidance of these risks in day care. As we worked, it grew into a book into which we believe we have gathered information unavailable in any other single source. But before beginning to address risks and risk reduction, we want to take a brief opportunity to describe some information which crystallizes the essence of what we believe about the benefits of day care to child and family health and why we wrote this book.

We have seen that some day care programs are accessible resources to families for the improvement and maintenance of the health and safety of their children. We have personally experienced all the power that day care programs can bring to offset the tragedy wrought by horrible living conditions and inadequate access to health care in this country. That experience has made a deep imprint on both of us. These experiences have motivated us to advcoate for the growth of good day care, which in turn advocates for the rights of families. Moreover, our personal experiences with the power of day care and with its enormous impact on the lives of children and families have convinced us that day care must protect all children—no matter what their living conditions at home—from the major risks which threaten the health and safety of children and the security of families. Without the assurances of such protection, we just load one more stress on the backs of already overstressed American families.

However, we do not ask the reader to rely on our personal experiences for assessment of the benefits of day care. There is evidence in the literature which describes the benefits of day care, particularly when day care is

interlocked with health care:

- In Thailand, many day care centers are established in association with child nutrition or midwifery health centers. These programs supplement the preschool child's diet with protein food in rural villages where preschool children are nutritionally vulnerable and both parents are engaged in farming and manual and construction work.[1]
- In Czechoslovakia, it has been documented that through good examples of child-rearing practices, child nutrition and hygienic principles, "day care staff helped to counsel and guide a major portion of the parental population and thus to reduce both the morbidity and mortality of infants and children."[2]
- In the United States, particularly in the southern and Appalachian areas of the states, day care programs have described many successful detections and treatment of disease, underimmunization, handicapping conditions, undernutrition— which would never have been discovered because of the scarce health resources in that region.[3]

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[1]Earl Siegel, "Child Care and Child Development in Thailand, Sweden and Israel" in the American Journal of Public Health, VII-63, No. 5, 1973.

[2]Hanus Papousek, "Group Rearing in Day Care Centers and Mental Health: Potential Advantages and Risks" in Research Publications of the Association for Research in Nervous and Mental Disease, 51:398 411, 1973.

[3]Nancy Travis, Report of the Southeastern Day Care Project, Atlanta Southern Regional Education Board, 1974.

Peggy Pizzo and Dana F. Tracy, The State of the Child in Appalachia: Report of Conference, in preparation.

- In Philadelphia, at least one day care program has demonstrated that day care children are better nourished and freer of lead poisoning than a matched control group of non-day care children.[4]

Finally, a national survey of the impacts of full-year Head Start Centers on community institutions in 58 communities was prepared for HEW in 1970. One of the major findings of this survey was that Head Start programs were highly involved in 53% of the health changes in their communities. Furthermore, there was some Head Start involvement in at least 73% of the health changes in those communities. Parent participation was positively related to Head Start's involvement. Kirschner Associates, authors of this report, conclude that:

"This study indicates that in less than half a decade, a remarkably short period, there have been many widespread and fundamental changes in these (health and educational) institutions... On a national basis, in large cities and small, in urban areas and rural, educational and health institutions have changed in fundamental ways. They have changed from a traditional concern solely with middle-class values and the middle-class child so that their programs widely reflect the philosophies and goals of Project Head Start--that is, to encourage and assist poor children and their families to develop their capabilities fully... a fundamental achievement because these traditional local institutions carry the weight of the responsibility to help poor families. The resources of these institutions are many times greater than Head Start's,

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[4]Festus Adebonojo and Susan S. Strahs, "The State of Nutrition of Urban Black Children in the U.S.A.' in Clinical Pediatrics, 12:563-570, Sept. 1973.

Black Urban Day Care Children" in The

their contacts with the poor are potentially far greater and their impacts can be continuing. It is a fundamental achievement not only because the potential benefits are so large but because the investment in achieving these changes has been relatively small. In fiscal year 1969, for instance, the Head Start budget was approximately $340 million, only slightly more than the total public education budget (excluding higher education) in the State of New Mexico, a state with a total population of only a million people. The Head Start investment appears to have had enormous leverage.[5]

We believe that an investment in good health and safety practices in day care would have an even more significant leverage. We hope this paper serves as a contribution towards that effort.

[5] Kirschner Associates, Inc., A National Survey of the Impacts of Head Start Centers on Community Institutions, Contract No. B89-4638, May, 1970.

SECTION SUMMARIES

Section I--Assumptions

In a four month period, a pediatrician/day care consultant and a day care consultant/writer, with the aid of over 375 references from the scientific and child welfare literature, and 131 contributors around the country, collaborated to:

(1) Describe health and safety risks in day care;

(2) Identify day care program characteristics which would help prevent or minimize risk;

(3) Describe the current state of health and safety practice in U.S. day care;

(4) Make recommendations for federal action, and;

(5) Discuss the impact of our findings.

This opening section describes some varying concepts of risk related to probability and to possibility of adverse events. Assumptions about risk made by insurance, legal and lay sources are described, as well as our own perspective. The origins of ambivalence about regulation of day care are analyzed within the context of cultural values, definitions of custodial vs. developmental day care and common emotional responses to discussion of risk.

This section gives the reader an idea of both the philosophy and the process by which this paper was developed.

Section II—What are the Health and Safety Risks for Children in Day Care?

In this section, we present the available evidence which delineates the major risks to health and safety of young children, in terms of both potentially severe outcomes as well as frequency of incidence. These risks are: motor vehicle and pedestrian accidents, fires and burns, falls, suffocation and ingestion, drowning, infectious disease, malnutrition, dental disease, lead absorption, hearing loss, developmental disabilities, speech difficulties, allergies, vision problems and genetically transmitted disease. In addition, the use of products such as playground equipment, toys, bicycles, infant furniture, beds (especially bunk beds) and sports-related products that fail to meet safety standards (or the improper use of products that do meet standards) constitute a hazard to the health and safety of children anywhere—including day care.

Section III--What Program Characteristics Would Help Prevent or Minimize Risk?

We believe that control of the risks described in Section II is related to both internal (within the day care program) and external (outside resources) characteristics. The internal characteristics we discuss include: (1) staff-child ratio; (2) health education/knowledge base of children, staff and parents; (3) structural characteristics of programs including the physical plant inside and outside, the movable structures within the facility and the environmental features surrounding the facility or associated with the activities of the program, such as traffic safety features; and (4) staff behavior.

The external characteristics which help prevent or minimize risk in day car discussed are: (1) day care program linkages with health resources; (2) trainin (3) regulation, and; (4) funding.

Program characteristics are correlated with the specific risks described in Section II. In discussing the external characteristics, the range of direct health service involvement required of day care programs is related to the availability of day care program linkages with community health resources. A rationale is given for specifying the extent of day care program involvement in direct health service delivery organized around the availability of adequate services from community health resources.

This section is completed with a discussion of a survey of consumer attitud which shows that American parents are committed supporters of health and safety standards for day care and many are willing to pay extra to have immunizations and checkups, planned nutritional meals and dental checkups available through day care.

Section IV--Current Health and Safety Practices in Day Care

The most recent major surveys of health and safety conditions in day care are examined in this section. From the information presented, we conclude that:

(1) A variety of studies have documented the existence of risk-enhancing conditions in day care, particularly in the areas of emergency preparedness, accident prevention, fire and burn prevention, detection of lead paint, sanitation, staff health care, health habit assessment and release from work because of illness.

(2) A variety of studies have documented that both the content and the process of regulation by individual states are inadequate for the protection of children from health and safety risks. Furthermore, compliance with existing standards for health and for physical plant have been described in several sources of information as very problematic for providers, although providers do not dispute the importance of health and safety standards.

(3) The Day Care Management study of fifty states has described the virtual non-existence of state training and technical assistance for licensing staff and providers in the area of health and safety features of the physical plant of day care programs, as well as an inadequate rate-setting system in states.

Section V--Our Conclusions and Some Options

The federal government is paying to have children at risk in day care. While we do not know that children are at increased risk (increased over what they would experience in their homes), the fact remains that the day care risk can be reduced. This exposure to risk results in requirements for increased federal and non-federal payments for medical care for accidents, poisoning and treatment programs to correct long-term defects.

We discuss three options for a federal role and discuss the implications of each. We support the third option we discuss: the adoption of specific federal codes as fiscal requirements. We further propose that the federal government accept responsibility for leadership in establishing uniform training, research, parent and provider informational services.

Section VI--Recommendations

We believe that the immediate development of federal standards is indicated as well as long term development of training, informational services, regulation and monitoring review. In this section, we suggest specific regulatory statements most of which are based on risk data presented in earlier sections, but some of which are based on common sense.

We stipulate the climate required for successful implementation of these regulations which includes adequate funding to permit compliance to be achieved, and supportive, rather than punitive, monitoring and technical assistance. As part of our long term recommendations, we urge the national adoption of the Child Life Safety Code and the development of two new codes: (1) a national day care sanitation code; and (2) a child day care health and safety code. We recommend that the federal government require that unless states have equivalent codes of their own, that states adopt these three national codes as pre-requisites for all federally funded day care in the state (preferably for all day care whether federally funded or not).

We suggest ways in which compliance with these standards could be fostered including development of monitoring systems which consolidate (rather than add) inspections, periodic federal day care site monitoring (rather than reliance on state records alone), requirement for cost based reimbursement rate setting, federal information dissemination on major health and safety and nutrition programs direct to day care providers and needed grievance procedures to deal with complaints arising from any level of the system (parent, provider, state agency or federal).

We make specific recommendations for training of federal and state regulatory personnel, for federal sponsorship of an annual national institute and periodic regional institutes on regulation of early childhood programs, for courses in health and safety for day care providers including use of innovative training techniques such as TV correspondence courses for providers who find it difficult to arrange substitutes or to travel to training facilities.

We specifically recommend the development of a relevant first aid course for provision of first aid in day care settings and federal sponsorship of locally useful health advocacy training/consultation programs similiar to those which have proven successful in New York and Philadelphia.

We recommend the development of training manuals for all levels of personnel, day care provider resource materials to explain regulations and the rationale for health and safety standards. In addition to training manuals, we recommend the development of a variety of resources and educational materials to help providers locate and coordinate with health resources and to help parents know what health and safety features to expect from federally funded day care. Further, we recommend incentives for health and nutrition consultants to make their services available to day care programs.

Finally, we recommend areas in which further research should be undertaken including accident rates, transmission and control of common infections, nutritic in day care, the relationship of staff mental health to health and safety in day care, effective coordination schemes, health and safety knowledge, attitudes and practices among day care providers nationally, the effectiveness of health and safety practices on risk reduction in day care and the development of low-co risk reducing safety devices which might be used in day care.

Section VII--What Would Be the Impact of Our Recommendations on Cost and Availability of Care?

The cost of most of our program monitoring, training, on-going health advocacy and coordination, and direct health service recommendations are affordable. The expected effectiveness of these activities has been discussed in previous sections. The need for a re-organization of regulations that will result in fewer inhibitions on the day care supply is also discussed. Particularly, in view of the incredible costs of hospitalization, prolonged medical treatment, pain and trauma that might be incurred if the present system continues, we think it quite reasonable to conclude that federal regulation of health and safety in day care--such as we have outlined--would be extremely cost-effective.

SECTION I

OUR ASSUMPTIONS

Background and Methodology

In December, 1975, William Prosser, Director of the HEW Office of Planning and Evaluation asked one of us (Susan Aronson) to prepare a concept paper on federal regulation of health and safety in day care as part of a congressionally mandated study of the appropriateness of the 1968 Federal Interagency Day Care Requirements (F.I.D.C.R.). Dr. Aronson, a pediatrician, day care researcher and consultant agreed to undertake the task in collaboration with Peggy Daly Pizzo, a day care consultant and writer.

Both collaborators brought to the task years of practical experience in operating and providing consultation for day care programs. Both have developed and helped teach inservice training courses in health and safety for day care providers. Dr. Aronson's particular blend of professional training research experience and contacts in the field of both preventive medicine and pediatrics brought a rigorous, prevention-oriented perspective to matters of child health. Ms. Pizzo's experiences in interviewing day care provider/advocates all over the country, first as a reporter for and then as editor of the national day care publication VOICE FOR CHILDREN, contributed a feeling for the difficulties of day care operation in different regions of the country. All of these experience and their resulting biases—have been woven into the final fabric of this report.

In February, 1976, as two collaborators, we submitted our plan (see Appendix A). The first part of the plan was to cast a wide information-gathering net to include both literature and expert sources. To our knowledge, the information we've sought—major risks to the health and safety of children and methods of controlling for those risks in day care—has never before been systematically gathered into one publication. Consequently, the necessary data had to be

collected in bits and pieces from a variety of sources and then sewn together. By the time the final report was drafted 375 references and 131 contributors were consulted (see Appendices B and C).

Some contributors submitted original papers (see Appendix D) while others provided published and unpublished data and personal experience. Much of the task was performed after hours, in evenings, on weekends and holidays without financial compensation.

The deadline for the final report was only four months from receipt of the funding approval. We owe thanks to all who gave so freely and so quickly to each step of the process: the initial collection of background information, the all day work session, the drafting and revision of the Interim Report and the preparation of the Final Report.

A special note of thanks and acknowledgement is due Robert S. Shane, Ph.D., staff scientist for the National Academy of Sciences, whose guidance, shared experience and professional contacts contributed substantially to this report. His participation yielded both personal and professional rewards, as the task provided special opportunities for counsel between him and his daughter, Susan Aronson.

What Is Safe? What Is A Risk?

Before we can look systematically at the data available on risks for children and risk avoidance in day care, we think it is fruitful to establish a definition of "safe" and to briefly reflect on attitudes toward risk, specifically towards risk in day care. In Of Acceptable Risk, William Lowrance offers:

"A thing is safe if its risks are judged to be acceptable."[1]

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[1] William W. Lowrance, Of Acceptable Risk, William Kaufmann, Inc., Los Altos, California, 1976, pg. 8.

Nothing, argues Dr. Lowrance, is completely without risk. The essential activities are to measure risk (an objective task) and to judge the acceptability of the risk (a matter of personal and social value judgement). "Knowledge of risks evolves and so do our personal and social standards of acceptability" says Dr. Lowrance. He offers the examples of X-rays and DDT.

Individuals make decisions about acceptability of risk differently from moment to moment. Societal decisions are equally fragile, subject as they are to the simmerings of conflicting socio-emotional responses to and values about risk.

Julian Walker and David Klein in a paper entitled "Society, Energy and Injury—Inevitable Triad?" offer some further insight into the role values play in the acceptability of risk.

> "Deep-seated patterns of custom, unstated philosophy, psychological responses and other aspects of the normative value system influence the degree of injury that a society will tolerate before outrage sets in and counter-measures are established. This value system also influences the proportion of its resources that a society is willing to devote to averting or reducing the problems resulting from trauma, and the manner in which it seeks to use those resources."[2]

Complexities In Measuring Risk

The general public and the different professions have evolved respective approaches to the definition and measurement of risk.

Webster defines risk as "the possibility of loss, injury, disadvantage of destruction" and "someone or something that creates or suggests a hazard or adverse chance." Note that the general definition of risk is in terms of

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[2]Julian Walker and David Klein, "Society, Energy and Injury—Inevitable Triad?", in Research Directions Toward the Reduction of Injury in the Young and the Old Patterns of Custom, National Institute for Child Health and Development, 1971.

possibility—not probability. In contrast, public attitudes towards risk-taking are frequently based on assumptions about probability of injury, loss, etc.

The insurance industry looks at risk both in terms of possibility and of probability. Elaborate methods are sometimes used to rank risks in order to establish premium rates. But sometimes premium rates are only based on assumptions of probability of risk. In these circumstances, claims experience is examined only when losses noticeably exceed profits.[3] Often, insurance companies produce materials which are used to educate the public about controlling those risks which have been found to have a high degree of probability—e.g., the risk of poison ingestion by young children.

The law has an 800 year old tradition on which it draws in determining what is a risk, which risks are more obvious than others, how to assign responsibility for that risk-taking which results in loss or injury.[4] The tradition is very complex and varies from state to state. Lawyers and judges distinguish strict liability, no-fault liability, contributing negligence, etc. We have tried to research this area for concepts relevant to the notion of risk in day care. It involves such complex issues however, that it really demands a separate research effort—one that we highly recommend.

The medical profession assesses risk by examining epidemiologic data on incidence and prevalence of specific events (e.g., vital statistics). Value decisions are not made by these data, but they provide a basis for value decision

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[3]Personal communication from Ransome Swords, Aetna-NAEYC Day Care Insurance Program, July, 1976.

[4]Personal communication with William Aikins Esq., Massachusetts Public Interest Lawyer who has been involved with day care in a number of states, July, 1976.

to be made. The personal value judgements of pediatric nurses and physicians are influenced by their particular experience with the pain, trauma and recovery which injured or severely ill children endure. These value judgements then furnish a particular kind of "window" into the consequences of prolonged exposure to major risks.

A commonality in all these different perspectives on risk is recognition of the interrelationships between the notion of risk and awareness of what constitutes a risk. Black's Law Dictionary, for example, says that an obvious risk is "one so plain that it would be instantly recognized by a person of ordinary intelligence". On the other hand, less obvious risks, such as that posed by cancer-causing vinyl chloride, argues William Lowrance, may be recognized only after years of highly technical research.

In our experience, the child advocate is drawn to the concept of recognition of risks. Child advocates are interested in risk for:

(1) What can be learned about events likely to result in childhood injury, illness or impairment and about conditions which are demonstrably associated with those adverse events.

(2) What can be developed as reasonable methods for controlling these conditions.

Of all the <u>provider/advocates</u> who responded to the interim draft of this paper for example, none expressed concerns about the <u>degree</u> of risk and none disputed the naming of a condition as a risk.[5] In fact, most advocates responded by <u>adding</u> to our description of risks which they had

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[5]Several, however, expressed concerns about our separating the discussion of risks to somatic integrity from a discussion of psychosomatic interrelationships--a valid concern, in our view.

observed in their dealings with young children. Of great concern, however, was the notion that protecting children from harm needs to be done in a way that does not cause more harm or other kinds of harm. All of our experiences with advocacy lead us to conclude that a child advocate can be expected to recognize risk when there is a demonstrated possibility of injury, illness or impairment in children for which a feasible non-harmful way of controlling these possibilities can be developed. Drawing on the epidemiological perspective of the medical profession for our information, our value judgements are ultimately those of child advocates.

Society's Responsibility for Protection of Day Care Children: Current Thinking

Federal funding of the care of children outside their homes is a phenomenon less than two generations old. Thus as a nation, despite evidence to the contrary, we are deeply accustomed to thinking of child-rearing as a private activity, conducted within private homes by parents or relatives of children.

Long-standing cultural traditions restrain intervention into the privacy of families for the purpose of protecting children. As long as parents are not intentionally injuring their children, much of society believes that parents have the right to take risks with their own children (witness the public hesitation and ambivalence about the matter of unrestrained children riding in the front seats of automobiles, despite the five-fold increase of risk of injury in an accident).

The mythology that nearly all children are cared for by family members (and that this has been a characteristic of American history) combines with social reticence about interference with family life to generate strong feelings of denial and ambivalence about regulation protective of children.

In actuality, of course, for centuries the children of the working poor have not been cared for at home. The nineteenth century solution to the child care problems of working mothers was to "employ" children in factories or on farms under conditions extremely hazardous to their health.[6] Decades of concerted public effort were necessary before society resolved its ambivalence about intrusion into private industry and families for the purposes of protecting children.

The last century has also seen the expansion of fundamental education opportunities to almost all American children and the rise of reliance on hospital and professional medical care for sick children. Ambivalence about public regulation of these activites is minimal. For example, society requires rigorous training and supervision of hospital pediatric nurses who care for sick children. Hospital operation is seen as a public activity. We also require that public schools meet fire-resistive structural design requirements and that school playgrounds be cleared of broken glass. Society sees hospitals and schools as public activites, in which non-related adults take responsibility for the safety of other people's children. We insist that such activities require trained staff and monitoring. Somehow, child-rearing itself is seen differently. Consequently, many Americans don't seem to know what to do about regulating day care, especially family day care. In historical terms, the United States hasn't had a long time—several decades, or less than one generation—to sort out how much of the judgement about the acceptability of risk in day care is an individual versus a societal responsibility. However, as the National Child Care Consumer Survey shows (see pages 121 and 122) parents who use child care are strongly in favor of standards for day care.

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[6]Dorothy Hewes, "Historical Precedents in Day Care" in Rationale for Child Care Services, ed. Steveanne Auerbach, Human Sciences Press, N.Y., 1976.

As authors of this paper, we argue that there is a public responsibility to protect the health and safety of children in day care. First, the technical complexity of some risks (as we will describe them in later sections) makes it impossible for individuals to rationally assess the magnitude of risk on an instance by instance basis. Second, some risks can be best avoided by anticipatory planning which is unlikely to occur without a systematic way to assure it. Third, when a relatively minor intrusion on personal freedom for safety is juxtaposed against grave or irreversible consequences to children, societal control of such risk taking is justified. Viewed in this way, day care regulation can be seen as a special form of consumer protection.

The Impact of the Notion of Custodial Vs. Developmental Care

One philosophy which we think has negatively influenced general awareness of health and safety risks in day care is the philosophy which distinguishes "custodial" care (the care and protection of a child's well-being, which is often seen as an unskilled function analogous to animal instinct) from "developmental" care (the "right" kind of day care which focuses on cognitive and socio-emotional development of the child, with some attention to good nutrition, health and safety). It is interesting to speculate on the origins of the custodial vs. developmental debate: a holdover from the Calvinistic mind/body dichotomy? The result of our cultural contempt for the "work" of mothers? Perhaps a combination of these attitudes contributes towards the unnecessary and unfortunate sharpness of distinction. But the result is a tendency to accept rather than attempt to reduce health and safety risks in day care. For example, let's take the wiping of a runny nose, since it is one of the most "custodial" of care activities. If the wiping of runny noses is seen as a menial activity which nearly any person can perform, then

It's quite likely that the nose will be wiped with a handkerchief, which is then put back in the caregiver's pocket (with no caregiver handwashing) and/or immediately used to wipe the next child's runny nose, thereby transmitting high doses of infectious agents from one child to the other. The wiping of runny noses doesn't have to be viewed as a "custodial" act. Instead it can be seen as an important public health measure, one which when done with an awareness of causes and control of infectious disease, can make a contribution to the reduction of disease in a community and to the prevention of the spread of viral and bacterial disease among the day care program's children. This preventive measure has implications for promoting the child's total development, since symptomatic viral and bacterial diseases may have negative implications for the total child. (See Section II page 62)

We argue that the division of the total child fostered by the custodial vs. developmental debate results in:

(1) the lack of emphasis on control of health and safety risks in the preparation of day care workers and early childhood educators;

(2) the low level of awareness among day care staff about health and safety practices.

We ask the reader to reflect on the possible relationship between this notion of custodial vs. developmental care and what is known about current health and safety practices in day care (documented in later sections). We think there are direct links between the derogatory connotations of "custodial" care and the sometimes incredibly hazardous conditions which have been found in federally funded day care.

Common Emotional Reactions to Discussion of Risk

In general, denial is a basic emotional response to the presentation of data about health and safety risks in young children. Walker and Klein point

the human psyche that favor a fatalistic view of injury, something "out of our control".[7] The very word accident emphasizes a chance occurence. Many view accident prevention through risk reduction as constraining and joy limiting. Child behavior with regard to risk-taking is seen as "impossible to control". Some argue that the American culture with its emphasis on heroic individual accomplishment, actually values risk-taking.

Those of us who are parents or who are responsible for the care of young children often experience an understandable need to protect ourselves through denial from "knowing too much" about the prevalence of child injury/death. When confronted with data about health and safety practices, we also have a need to defend our own practices as parents. We ask the readers of this report to be aware of responses that may be related to their personal emotional involvement with loved children--either their own children or children in their care.

Other emotional responses, related to advocacy for government sponsorship of day care pose barriers to open discussion of health and safety risks. The "risk" of day care has been used to stifle the demands of child advocates for better funding and public support of day care. Advocates of child care are starved for documentation of the benefits of day care; we have heard the fear expressed that continued public exposure of risks in day care will weaken the case for day care funding. And so, as ambivalent as our nation is about day care, we all experience a strong pull towards "sweeping risks in day care under-the-rug".

A part of Ann DeHuff Peters, M.D.,'s response to the Interim Report exemplifies this view:

> "The first section (now Section II) seems unduly long, with too many negative, even frightening statistics and comments. If I were considering plans for a day care program and were confronted

> with this, I would stop right there. Everyone takes some risks in life, and the home situations of many children in our supposedly advanced and affluent nation leave much to be desired, as you know..."[8]

While we agree with Dr. Peters that everyone takes some risks and that home environments contain undesirable hazards, we do not see this as a reason for failing to identify and reduce risks in children's day care environments.

Finally, we are aware of child advocate's fears about "institutions and young children". As a nation, we have finally just recently been able to eliminate orphanages and foundlings homes, where children were kept clean and restricted like stiff little penguins "for the sake of their health". A determination to struggle against attempts to "institutionalize" children in hygienic, sterile day care programs runs very deep among child care advocates—and rightly so. We do not believe, however, that day care programs with a high level of awareness and control of health and safety risks must be "institutional". Perhaps a brief description of one such day care program, taken from notes written after a first visit by one of us (Pizzo) illustrates the point:

> "It looks like any other day care center when you first come in—clutter of boots and jackets, children's art work, notices and signs welcoming parents. But there are also immediate signals that this is a different kind of place—the doors to each classroom have a slim strip cut down the length of each one where safety glass has been installed—to prevent accidental injury from a door being suddenly opened upon a child playing close to the doorway, explained one staff member. It's naptime and the children and staff are snuggling on the floor listening to stories. In one room, a baby crawls from one end of the room to the other—a room which has older pre-schoolers in it as well. I find myself worrying about the baby making his way across the floor but the staff member points out that the room has been particularly organized so that this baby can be watched from any vantage point within the room. Observing the teacher reading a story I can see that his eyes frequently leave the book momentarily to watch the baby.

[8] Personal communication from Ann DeHuff Peters, M.D., August, 1976. Dr. Peters

There are other small signs of a thoughtful vigilance--hand-lettered EXIT signs have been placed near the observation windows on the 2nd floor because 'parents and visitors standing here might have to evacuate the building quickly and might not be familiar with the second-floor exit ways'.

On top of each child's cubby rests a sheet of paper on which parents and teachers have written notes to each other. Some notes are a few sentences, other are a few words in halting hand-writing. 'Jason says he has a sore throat this morning. Could you tell me how he eats?' Underneath is written 'Jason ate his lunch well and he played actively all morning. Let's talk some more'.

These few sentences are a brief description of a day care center in which a very intense awareness is paid to the health and safety of each child. All of the health and safety risks described in this paper have been considered in the planning and operation of this program. which is run exclusively on state set funding levels. Nevertheless, it is a lively, noisy program in which children tumble about and parents play a strong role in the development of health policies. When you first walk in, it almost looks "dirty". (But it's not!) We can say this with intimate knowledge of the program because this is The Learning Center, developed by Dr. Aronson, who continues to serve as a health consultant to the center. Safe, clean health-promoting day care does not have to be and must not be a sterile institution. Instead, it can and should be an environment in which parents, children and staff are relatively freed from worries about injury or illness, precisely because such careful steps have been taken to minimize those possibilities. Thus parents, children and staff are able to spend less time in anxious restriction of child or adult behavior and more time in the development of a caring community. That is the kind of day care we advocate.

SECTION II

WHAT ARE THE MAJOR HEALTH AND SAFETY RISKS FOR CHILDREN IN DAY CARE?

Our Approach to the Issue--What Is A Risk?

In preparing this report, we have considered several alternatives to a discussion of health and safety risks to young children in day care. After careful thought, we have chosen to examine risks chiefly in terms of age vulnerability, e.g., the susceptibility of young children in general across different ages and developmental lines to hazards which can affect their healthy growth and development.

We considered an examination of risks inherent in day care (i.e., care by non-relatives in an out-of-home environment for a substantial part of the day) as somehow different from (and possibly more accelerated than) risks in the child's own home environment. In a few instances, such as infectious disease, it might be possible to speculate with some confidence that children in day care are exposed to a greater pool of organisms to which they have not previously built immunity (as opposed to the family environment where children might be likely to be exposed to a smaller, more "familiar" common pool of organisms). However, this speculation assumes that the young child is primarily contained within one home setting and exposed only to nuclear family members. This generalization is probably invalid in contemporary urban core society where children are taken everywhere and exposed to a full range of community health risks by their parents. We simply have no statistically valid data about this point.

Uncertainty underlines all assumptions about the "own home" versus "day care" environments. We cannot assume that all children in day care come from a fairly typical home environment. Indeed, our own experience with day care programs would lead us towards an assertion that there is a wide diversity of home environments--some of which have posed distinctly greater risks to the

acquaintad. Given these complexities, it seemed wise to reject an "own home" versus "day care" approach.

In addition to an overall consideration of risks to all children, we tried to find ways to narrow our examination of risks to to the special population now in day care. Since most of the children currently in day care purchased by federal funds are low-income children (U.S. Senate Committee on Finance, Child Care Data and Materials, 1974) it seemed appropriate to examine some risks which the literature shows are accentuated in those low-income groups. Our assumption is that children in federally funded day care would be particularly vulnerable to risks affecting low-income children in general.

We deeply believe that a child's health is influenced by a variety of factors—biological, emotional, social, etc. Research studies have shown that stress increases an individual's vulnerability to the risk of infection and accidental injury.[1] Since a child's level of stress is clearly influenced by stress in his/her caregiver, it can certainly be argued that the health and safety of children are more at risk when their caregivers are under stress. In fact, childhood accidents, and particularly poisonings, have been shown to have a higher incidence in families where the caregiving parent is under stress.[2]

Conversely, the child's cognitive and emotional well-being is greatly affected by his/her biological condition: lack of adequate iron in a child's blood has enormous impact on a child's affective state. Most recently, studies have linked frequent incidence of serous otitis media (SOM) in childhood with low I.Q.[3] Injury, illness, general poor health—all can impair the healthy development of ego and of intellectual ability.

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[1] Robert Haggerty, "Childhood Accidents" and "Accidental Poisoning" in Ambulatory Pediatrics, Green and Haggerty, 1968.

[2] Ibid.

We ask the reader to bear in mind this association of biological problems with cognitive and emotional problems when reading statistics about the incidence of falls, respiratory disease, poisonings in childhood, undernutrition, et

In addition we clearly recognize that any young child, including the child in day care is exposed to risks other than health and safety, e.g., the risk of impairment of a positive sense of self, the risk of "hospitalism" or severe impairment of infant joy, etc. We acknowlege those risks and they influence the development of our recommendations. This paper will not directly address those risks, however;[4] several other concept papers being developed for the FIDCR committee will focus attention on psychosocial aspects of day care for young children. This paper will focus primarily on risks "to life and limb"—the physical well-being of the child.

Vulnerability to Health and Safety Risks

There are a variety of parameters by which to classify vulnerability to health and safety risks, e.g., the statistics relating to causes of death, rates of accidental injury, the most common kinds of illnesses and/or the kinds of illnesses which most frequently require hospitalization among young children.

We decided that the most useful analysis would be based on the incidence (highest to lowest incidence of risks for young children) severity (with fatality as an index of greatest severity) and economics (in terms of cost to life and limb, as well as financial costs where risks are not controlled). The organizing questions are: (1) What are the causes of mortality (death) and morbidity (illness and injury) in young children? and (2) Which can be prevented or attenuated?

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[4]See Appendix B for outline and plan submitted to HEW for funding of preparation of this report.

THE THREE MAJOR RISKS

The data that have been collected in response to these questions allows us to say in a preliminary way that the risks to young children primarily fall into three categories: (a) accidents, (b) infectious disease, and (c) the "quiet" conditions which, undetected, interfere with healthy growth and development in young children. Consequently, our discussion will be organized around these three categories.

ACCIDENTS

The data which we have collected so far permits an analysis of accidents based on how they cause childhood deaths. In addition, we are able to present reliable data on those products most likely to be associated with accidental injury and death to young children. We shall present both analytical frameworks, since we believe that both have implications for the control of safety risks in young children.

At the present time, we do not have any reliable data on the accidental injury rate associated with day care per se. We have tried seeking out insurance companies, particularly companies who specialize in insurance for day care programs to see if they have collected any data. At this time, it appears that there are insurance companies which have collected information on risks in day care[5] however, we were not able to obtain this data from the insurance industry before the final deadline for this report.

[5]Ransome Swords, Aetna Life Insurance Co., 1717A Fulton National Bank, 58 Marietta St.

Leading Causes of Death in Young Children

The following were the most frequent causes of death among young children between the ages of one and four in 1973:

TABLE I [6]

	# Deaths	Deaths/100,000
One to Four Years	10,843	80
Accidents	4,346	32
Motor-Vehicle	1,672	12
Drowning	860	6
Fires, burns	692	5
Ingestion of food, object	214	2
Falls	181	1
Other	727	6
Congenital anomalies	1,306	10
Cancer	869	6

As can be seen, accidents are the leading cause of death (40%) in this age group and motor vehicle accidents are way out in front.

Table II lists the most frequent causes of death in early infancy.

[6]Accident Facts, 1975 Edition, National Safety Council, Chicago.

TABLE II [7]

	# Deaths	Deaths/100,000
Under One Year	55,581	1,805
Anoxia	14,582	474
Congenital anomalies	8,953	291
Complications of pregnancy and childbirth	7,368	239
Immaturity	5,369	174
Pneumonia	3,510	114
Accidents	1,691	55
Ingestion of food object	485	16
Mech. suffocation	336	11
Motor-vehicle	326	11
Fires, burns	154	5
Falls	94	3
Other	296	9

Although infants under one year died more frequently from conditions related to childbirth and from pneumonia, accidents accounted for 55 deaths per 100,000 for the whole population in 1973.[8]

As can be seen in Table III below, accidents again emerge as the largest killer in the five to fourteen year old age group.

TABLE III [9]

	# Deaths	Deaths/100,000
Five to Fourteen Years	15,982	41
Accidents	8,102	21
Motor-vehicle	4,124	11
Drowning	1,580	4
Fires, burns	526	1
Other	1,872	5
Cancer	2,092	5
Congenital anomalies	842	2

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[7] Ibid.

[8] Ibid.

Why are children so vulnerable to accidents? Obviously, the normal developmental sequence of behaviors in childhood is closely related. Thus infants who are putting everything into their mouths are more vulnerable to ingestion-related deaths than older children. General curiosity, inexperience and lack of impulse control in young children plays a large part in their vulnerability to accidents.[10] The Office of Child Development Manual on Health Services in Day Care offers a helpful chart:[11]

AGE	CHARACTERISTICS	ACCIDENT HAZARDS	MEASURES FOR PREVENTION
Birth to 4 mo.	Eats, sleeps, cries	Bath-Scalding	Check bath water with elbow. Keep 1 hand on baby.
	Rolls off flat surfaces, Wriggles	Falls	Never turn back on baby who is on table or bed.
		Toys	Select toys that are too large to swallow, too tough to break with no sharp points or edges.
		Sharp Objects	Keep pins and other sharp objects out of baby's reach.
		Smothering	Filmy plastics, harnesses, zippered bags and pillows can smother or strangle. A firm mattress and loose covering for baby are safest. Babies of this age need complete protection.

(Cont'd)

[10] Barnett, "Accidents, Poisonings and Other Environmental Hazards in Childhood", in Pediatrics, 1972.

[11] Frederick North, M.D., Health Services: A Guide for Project Directors and Health Personnel, DHEW Publication No. (OCD) 73-12, pp. 37-39.

AGE	CHARACTERISTICS	ACCIDENT HAZARDS	MEASURES FOR PREVENTION
4-12 months	Grasps and moves more. Puts objects in his/her mouth.	Play areas	Keep baby in a safe place near attendant. The floor, full-sized bed, and yard are unsafe without supervision.
		Bath	Check temperature of bath water with elbow. Keep baby out of reach of faucets. Don't leave him alone in bath for any reason.
		Toys	Large beads on strong cord and unbreakable rounded toys of smooth wood or plastic are safe.
		Small objects	Keep buttons, beads, and other small objects from baby's reach.
			Children of this age still need full-time protection.
		Falls	Don't turn your back on him when he is on an elevated surface.
		Burns	Place guards around registers and floor furnaces. Keep hot liquids, hot foods, and electric cords on irons, toasters and coffee pots out of baby's reach. Use sturdy and round-edged furniture. Avoid hot steam vaporizers.
1-2 years	Investigates, climbs, opens doors and drawers; takes things apart; likes to play	Gates, windows, doors	Keep doors leading to stairways, driveways and storage areas securely fastened. Put gates on stairways and porches. Keep screens locked or nailed.
		Play areas	Fence the play yard. Provide sturdy toy with no small removable parts and of unbreakable material. Electric cords to coffee pots, toasters irons and radios should be kept out of reach.
		Water	Never leave child alone in tub, wading pool, or around open or frozen water.
		Poisons	Store all medicines and poisons in lock cabinet. Store cosmetics and household products, especially caustics, out of

AGE	CHARACTERISTICS	ACCIDENT HAZARDS	MEASURES FOR PREVENTION
1-2 years cont'd.		Burns	Provide guards for wall heaters, registers and floor furnaces. Never leave children alone in the house.
			Close supervision is <u>needed</u> to protect child from accidents.
2-3 years	Fascinated by fire. Moves about constantly. Tries to do things alone. Imitates. Runs and is lightening fast. Is impatient with restraint.	Traffic	Keep child away from street and driveway with strong fence and firm discipline.
		Water	Even shallow wading pools are unsafe unless carefully supervised.
		Toys	Large sturdy toys without sharp edges or small removable parts are safest.
		Burns	Keep matches and cigarette lighters out of reach of children. Teach children the danger of open flames. Never leave children alone in the house.
		Dangerous objects	Lock up medicine and household and garden poisons. Store dangerous tools, firearms, and garden equipment in a safe place out of reach of children. Teach safe ways of handling appropriate tools and kitchen equipment.
		Playmates	Accidents are more frequent when playmates are older—the 2 year old may be easily hurt by bats, hard balls, bicycles and rough play.
3-6 years	Explores the neighborhood, climbs, rides tricycles. Likes and plays rough games. Frequently out of sight of adults.	Tools and equipment	Store in a safe place, out of reach and locked. Teach safe use of tools and kitchen equipment.
		Poisons and burns	Keep medicines and household products and matches locked up.
		Falls and injuries	Check the play area for attractive hazards such as old refrigerators, deep holes, trash heaps, construction and rickety buildings.
		Drowning	Teach the danger of water and start swimming instruction.
		Traffic	Let him learn rules and dangers of traffic He must learn instant obedience where traffic is concerned.

AGE	CHARACTERISTICS	ACCIDENT HAZARDS	MEASURES FOR PREVENTION
6-12 years	Away from home many hours a week. Participates in active sports, is part of a group and will "try anything once". In traffic on foot and bicycle. Teaching must gradually replace supervision.	Traffic	Drive safely as an example. Use safety belts. Teach pedestrian and bicycle safety rules. Don't allow play in the streets or alleys.
		Firearms	Store safely, handle carefully, teach proper use.
		Sports	Provide instruction, safe space and equipment, supervision of any competiti
		Drowning	Teach swimming and boating safety.

Adult underprotection—either from lack of knowledge or from other causes—plays an important part. This is especially clear in the motor vehicle related acciden which are the principal cause of accidental death among children one to fourteen years of age (see Table I, II, III).

Motor Vehicle Accidents

Shelness and Charles assert that more small children are killed and injured inside the vehicle than outside.[12] It requires 200 pounds of restraining force to hold an infant against the impact force exerted in a collision at 10 m.p.h., 600 pounds at 30 m.p.h. The impact force increases with the size of the body mass so that for larger than infant sized children, even more restraining force is required.[13] Only a restraining device can perform the job of protecting the child against such forces. A Washington State review of seat belt usage statistics revealed that of 19,061 motor vehicle occupants under age 5, only 15.1% were restrained (2,880). Of those restrained, not one was killed in the 1970 - 1974 study while 82 of the 16,181 unrestrained children (0.5%) were killed outright

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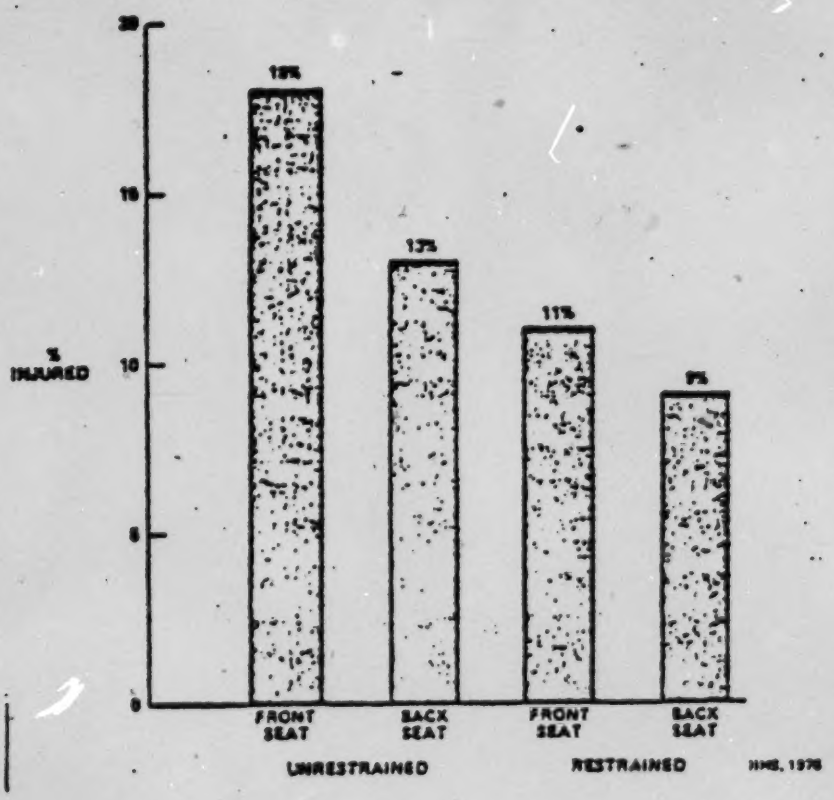
[12]Annemarie Shelness and Seymour Charles, M.D., "Children as Passengers in Automobile The Neglected Minority on the Nation's Highways" in Pediatrics, Aug. 1975, 56

or died as the result of injury in vehicular accidents in the same five year period.[14]

Another study, conducted by the Insurance Institute for Highway Safety and based on data involving 26,971 passengers less than 15 years of age in reported crashes in North Carolina in a two year period showed that children restrained in the back seats of an automobile suffered the lowest injury rate, while unrestrained children, particularly in the front seat, suffered the highest rates of injury.[15]

INJURY RATES OF PASSENGERS LESS THAN 15 YEARS OF AGE IN 1967 AND LATER MODEL YEAR CRASH-INVOLVED AUTOMOBILES IN NORTH CAROLINA, 1973-1974, BY SEATING LOCATION AND RESTRAINT USE.



[14]Ibid.

[15]Insurance Institute for Highway Safety, Status Report, May, 1976, 11:8.

A special vulnerability exists in those children who are transported by school bus or other vehicle used in pupil transportation. In 1973, 4,700 pupils were injured in school bus accidents and 90 pupils were killed. Of the pupils killed, about 35 were passengers on school buses and 55 were pedestrians either approaching or leaving a loading zone.[16] Charles and Shelness cite evidence of the vulnerability of youngsters in school buses, attributing facial, head, neck, and chest injuries to exposed horizontal rails on seat backs of school buses.[17] They also warn that an insufficient number of escape routes and inadequate drilling of children in emergency evacuation procedures would impede egress, particularly in overcrowded buses, with the possibility of panic further hindering escape.[18] Small vehicles—vans, carry-all, station wagons, and "compact" buses—are singled out as especially unsafe for a number of reasons, chief among them being their smaller size and resultant lighter weight (compared to standard buses) which make them more vulnerable in crashes, thereby posing a far greater injury potential to occupants. Unavailability or non-use of available safety belts in these small vehicles is viewed as inexcusable.[19] Even regular size school buses are flimsily built, lack safety belts, lack safe well-trained drivers, and are just now coming under federal regulation (Safe School Bus Regulations— Department of Transportation).

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[16] Accident Facts, pp. 92-93.

[17] Seymour Charles, M.D. and Annemarie Shelness, "How Safe is Pupil Transportation?", supplement to Pediatrics, January, 1970, p. 175.

[18] Ibid., p. 180

[19] Ibid., p. 179

In addition to death resulting from injury inside a motor vehicle, young pedestrians are particularly vulnerable to being struck by motor vehicles. In 1974, 680 children aged 0 to 4, and 1,500 children aged 5 to 14 were killed as a result of this kind of accident. Of the 55 pupils killed as pedestrians by school buses, more than 50% were struck by the very same school bus they were entering or leaving.[20] Obviously, vulnerability for the child as a pedestrian is associated with lack of impulse control as well as lack of adequate protected play space, particularly for children in the under 4 age group.

Child pedestrian accidents occur most often from March through October, occur more frequently between intersections than at intersections and more often at intersections without signals than at intersections with signals.[21] More detail is available from a 1975 report of a study of urban pedestrian accidents performed in six major cities.[22] This report showed that children under 9 years of age accounted for 33% of the 2,044 pedestrian accidents reported (24% for 5 to 9 year olds). Those injured were predominantly male (over 60%) had serious injury, were injured in day light hours under clear or cloudy (but not rain, sleet, snow, fog or mist) weather conditions. Most were struck by cars on two-way, two-lane roads in residential areas where there were no traffic control signs or signals, at non-intersections, not in crosswalks, by vehicles which were going straight ahead where vision was blocked by parked vehicles. The victims were most commonly running and appeared suddenly from

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[20] Accident Facts, pp. 92-93.

[21] Allan Blackman, The Role of City Planning in Child Pedestrian Safety, Center for Planning and Development Research, Un. of Calif., Berkley, 1966, pp. 19-20.

[22] Martin Reiss and Allen Shindler, "School Trip Safety and Urban Play Areas" Vol. II Report No. FHWA-RD-75-106, November, 1975.

ehind parked vehicles.

Supervision and adequacy of safe play space probably plays a key role. hild pedestrian accident victims come from families with more maternal ickness, less maternal supervision, and areas with fewer play facilities.[23] elatively minor environmental adjustments can help to reduce pedestrian ccident risk. Control of traffic patterns by improved lighting and one-way raffic restrictions is associated with a 20% decrease of pedestrian accidents.[24] edestrian safety is better in limited access subdivisions where streets curve nd do not have grid-like parallel intersections. A limited access situation an be created in grid-like inner-city neighborhoods by using one-way and o-entry restrictions.

According to the U.S. Department of Transportation Federal Highway Administration, edestrian accidents can be reduced by planning safe walking routes.[25] onsideration should be given to routing children so they:

> Aggregate as soon as possible (a group is more readily seen by a motorist)
>
> Cross the fewest number of streets possible
>
> Walk on sidewalks where available
>
> Walk the shortest possible distance on streets without sidewalks or wide shoulders
>
> Walk facing traffic on streets where there are no sidewalks
>
> Avoid high speed, high volume roadways (speed limits in excess of 25 m.p.h. are considered walking hazards)

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[23] Studies by Backett and Read quoted in Blackman, op. cit., p. 22.

[24] Ibid., p. 29.

[25] A. Shindler, H. Robertson and M. Reiss, "School Trip Safety and Urban Play Areas, Vol. V, Guidelines for the Development of Safe Walking Trips and School Maps" and Vol. VI "Guidelines for Planning School Bus Routing

Make maximum use of protective devices—crossing guards, school patrols, traffic control devices

Avoid vehicle overpasses and underpasses

Use easements with walkways through parks or other available areas

Pick crossing points considering:

Approach speeds

Traffic and pedestrian volume

On-street parking areas (potential dart-out situations)

Road geometry (sight distance, curvature)

Type of area (residential, commercial, industrial)

Traffic control devices (signs, lights, buffer strips, guardrails)

Availability of assistance measures (crossing guards, school patrols)

In addition to the vulnerability imposed on the young child by environments in which risk reducing countermeasures have not been used, the child's natural developmental limitations increase his risk as a pedestrian. In a 1974 report of a study of child pedestrian safety in Great Britain, 7 to 8 year old children were asked to check for traffic hazards and to choose safe crossing points after a mass media introduction of a pedestrian safety code: The Green Cross Code.[26] The introduction of the code was associated with an 11% reduction in child pedestrian casualties in the following three months. When asked to say when traffic was coming, over 90% of the children noticed traffic from the right and left. This rate dropped to 72% in those cases where traffic was approaching in front of them. In cases where traffic came from behind, there was a further reduction to 65%. The majority of the children (84%) were able to say when all

[26] K.J. Sargent and D. Sheppard, "The Development of the Green Cross Code", Transport and Road Research Laboratory, TRRL, Report LR605, Crowthorne,

the traffic had gone. In choosing a safe place to cross, over two-thirds of the children crossed next to their starting point or in front of their goal. These child preferences can be expected to increase the probability of accidents when they are combined with exposure at preferred crossing points to some of the environmental risks previously described.

John Snow, Administrator with the U.S. Department of Transportation writes:

> "The 'dart-out' accident type accounts for 57 percent of all urban pedestrian accidents involving children 0 to 14. A child usually runs into the street in the middle of the block without looking for on-coming traffic. The driver of an automobile does not see the child in time to stop.
>
> One of the factors considered partially responsible for the 'dart-out' accident involving children 0 to 4 was the lack of supervision by a responsible adult. It is felt that all children, including those of school age, would benefit from increased guidance and/or supervision. Such guidance and/or supervision would include suggestions as to safe play locations and alternate play arrangements. Accordingly, NHTSA is conducting research to identify hazardous play situations and to develop potential child pedestrian supervision/guidance procedures. The implications for child care are clear in this situation.
>
> We are testing a training package for 5 to 9 year olds which is designed to teach safe mid-block crossing behaviors. When the tests have been completed, the concepts contained in the package might be adaptable to the child care environment."[27]

Implications of Motor Vehicle Data for Day Care

The 1975 National Child Care Consumer Survey shows that 8.3% of day care center users are transported to the center by the day care agency. In addition, 6.1% of nursery school users and 16% of Head Start users are transported by

[27]Personal communication, John Snow, Administrator, U.S. Department of Transportation, National Highway Traffic Safety Administration, Washington, D.C., June, 197

the service provider.[28] The amount of transportation usage during the day, e.g., a field trip, is unknown. Our experience in three major metropolitan areas leads us to believe that transportation for the purpose of field trips is common in federally funded day care. If day care children are unrestrained (or inadequately restrained) while being transported, they are at serious risk of injury and death. In addition, pedestrian risk reduction via traffic safety education and adjustment of pedestrian and environmental interfaces should be used in day care.

Risk of Death From Accidents Other Than Those Related to Motor Vehicles

As previously pointed out, risks differ across age groups. We will deal with infants first, then 1 to 4 year olds, then 5 to 14 year olds.

Infants

Six hundred infants died in 1974 from suffocation due to an ingested object or food which resulted in the obstruction of respiratory passages. Among accidental deaths, this was the largest category. Susceptibility can be understood in light of the facts that (1) small objects on the floor and low tables are available to crawling infants; (2) infantile curiosity about objects is usually satisfied in the first year by mouthing objects; and (3) when compared with older children, the airways of infants are relatively narrow and more easily blocked. Peanuts, popcorn, hard candies and other hard, sm: foods are highly popular among older children and are high-risk foods for infants and small children. Mechanical suffocation, from plastic bags or from wedging of the head in between a mattress and the side of a crib or baby carriage is also an important cause of death (see Table II on page 26).

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[28] Thomas Rodes and John Moore, Current Patterns of Child Care Use in the United

In December, 1975, the U.S. Consumer Product Safety Commission received 126 death certificates of crib-related cases which occurred between January, 1970 and August, 1972. The cause of death in all these cases was suffocation. Fifty infants suffocated because their heads became lodged in between the mattress and the crib slats; 39 deaths resulted from the entrapment of the baby's head in between the slats; 8 deaths occurred when the infant was wedged between the crib and the wall; and 6 deaths resulted from entanglement of a pacifier ribbon or string in crib parts causing strangulation.[29]

As can be seen from TABLE II, on page 25, the infant is also at risk from death by fire, presumably at a high risk because of an infant's immobility and necessary reliance on being carried out of a burning building. The National Fire Prevention and Control Administration of the Department of Commerce reports that 10% of the United States population aged 0 to 5 were injured by fire in 1974. Nationwide, an estimated 5.6 million household fires take place each year. This figure excludes fires in business establishments, public places and government buildings. Kitchen fires involving cooking constitute 40% of all household fires. Non-cooking kitchen fires account for another 25% of the total.[30] It has been noted also that overcrowding in high-rise buildings or tenements such as are found in low-income areas, increases the risk of death by fire to infants and very young children and thus increases the risk of death by fire among children from low-income areas.[31] Also, two-thirds of young children fatally burned sustain the injury at a time when there is no adult present in the home.[32] This last fact emphasizes the need for the constant

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[29]Hazard Analysis: Cribs, U.S. Consumer Product Safety Commission, December, 1975.

[30]Highlights of the National Household Fire Survey, U.S. Department of Commerce, National Fire Prevention and Control Administration.

presence of adults nearby wherever children are in care (whether the children are asleep or awake).

Although not fatal, an injury to which infants in particular are vulnerable is severe burning of the mouth and the mucuous membranes of the lips and tongue. This type of injury results from the sucking of frayed ends of electric cords or a female end of an extension cord still plugged into an outlet.[33] This can result in irreparable damage often not apparent at first, so that the risk is not only of injury but also of medical mismanagement.[34]

Finally, falls are a cause of accidental death among infants. Infants are dependent on adults to position them safely so that their body movements will not bring them over edges of tables, counters, couches and other places where adults commonly leave infants unattended. The chief danger is head injury. Infants are particularly vulnerable to what is sometimes called a "ping pong" skull fracture, in which both outer and inner skull tables are displaced inwards without a break in either.[35] In a developing child, head injury with its attendant potential for brain injury is a risk of great significance.

Implications of General Accident Data for Day Care

The preceeding section suggest that infants are at risk in day care settings if such settings have any of the following conditions: (1) inadequate protection from fire; (2) accessible small objects, electric cords, etc.; or (3) staffing by insufficient adults to allow for close physical proximity to all infants or to allow for complete rapid evacuation

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[33]Op. Cit., Einhorn, p. 519.

[34]Lawrence Pickett, "Burns" in Green and Haggerty Ambulatory Pediatrics, 1968.

[35]James Hammill, "Trauma to the Nervous System" in Barnett Pediatrics, 1972.

of all infants in case of fire; or (4) staffing by individuals who do not provide appropriate management of minor injury situations experienced by the children. Thus, the implications here are for control of (1) structural characteristics of the day care setting; (2) caregiver behavior with regard to monitoring and removal of hazards; (3) staff-child ratio; and (4) caregiver behavior in injury management.

Children 1 to 4 Years of Age

After motor vehicle accidents, drowning is the major cause of death among children in this age group, with 860 deaths estimated in 1973. Toddlers drown more frequently while unattended in bathtubs or backyard ponds and swimming pools.[36] Their vulnerability to falls and their difficulty in positioning themselves to be able to breathe, once they are in the water, probably increases their susceptibility to drowning. Death from fires and burns is also a major risk for this age group, with 692 deaths reported in 1973. As with infants, young children are even more at risk in conditions of substandard housing and adult absence or underprotection. Aspiration of food or an object took the lives of 214 children and falls resulted in death for 181 children—common risks which children in this age group share with infants. With greater access to dangerous objects like balloons or small toys, the 1 to 4 year old has a wider range of possibly lethal objects to aspirate.

However, there is another risk which enters significantly into the lives of children once they become mobile: the risk of death or injury from poisoning. In 1973, poisoning accounted for the deaths of 149 children under the age of five.

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[36]Einhorn, "Drowning" in Barnett, Pediatrics, 1973.

Drugs and medications, especially aspirin, accounted for 102 deaths; other solid and liquid substances, particularly petroleum products and pesticides, fertilizers, and plant food were associated with 47 deaths. [37]

The incidence of nonfatal poisoning is much greater—at least 2,000,000 childhood ingestions per year come to the attention of the health professions in the United States. Effective safety packaging has resulted in a sharp downward trend in aspirin poisoning since 1970.[38]

Most poison ingestions take place in homes, probably due to the fact that the overwhelming number of two year olds (peak age for poisoning) are still spending their days in private homes.

Nonfatal Injury in Children

The following table, taken from the Vital Health Statistics for 1971 to 1972, provides an overview of total persons injured in the United States. In the table, the data are expressed as the number of persons injured per 1,000 persons per year. For children under six, falls, followed by complications of medical or surgical procedures, injury caused by animal or insect, bumping into objects or persons and being struck by a moving object are the most common types of accidents causing injuries that involve either restricted activity or medical attention.

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[37] Accident Facts, 1975

[38] Robert Scheiz, "The Management of Accidental Childhood Poisoning", Pediatrics 54:3, September, 1974.

TABLE IV

Table 3. Average annual number of persons injured and number of persons injured per 1,000 persons per year, by age and detailed type of accident: United States, 1971-72

[Data are based on household interviews of the civilian, noninstitutional population. The survey design, general quality control, and estimation procedures of the survey are given in appendix I. Definitions of terms are given in appendix II]

Detailed type of accident	All ages	Under 6 years	6-16 years	17-24 years	25-44 years	45-64 years	65 years and over
	Average number of persons injured in 2 years[1]						
Total persons injured	63,489	8,289	17,493	10,743	13,987	8,106	4,160
Moving motor vehicle[2]	4,722	*148	886	1,560	1,267	673	*191
Injured person outside vehicle	437	*36	*123	*76	*117	048	*37
Injured person inside vehicle or getting in or out	4,218	*113	725	1,445	1,150	616	*133
Collision between 2 or more motor vehicles on roadway	2,363	*76	*389	772	626	323	*78
Ran off roadway	339	--	*148	*147	*141	*19	--
Accident not on roadway	447	*19	*88	*102	*130	*17	*20
Other and unknown	822	*18	*208	*266	*249	*93	*35
All other accidents	58,677	8,142	16,609	9,183	12,840	8,133	3,969
Uncontrolled fire or explosion	*93	--	--	*68	*53	--	--
Discharge of firearm	*133	--	*37	*18	*100	--	--
Nonmotor vehicle in accident	1,205	*219	783	*58	*98	*23	*24
Machinery in operation	1,178	--	*98	334	448	*210	*36
Cutting or piercing instrument	4,194	*314	1,344	741	832	372	*191
Foreign body in eye, windpipe, or other orifice	1,445	*230	*173	*333	488	*165	*54
Injury caused by animal or insect	2,862	530	827	*211	326	379	*210
Fall on stairs, steps, or from a height	4,403	1,112	1,236	433	773	365	*283
All other falls	9,284	1,336	2,812	1,085	1,217	1,403	1,358
Bumped into object or person	5,644	506	2,269	1,023	1,031	623	*176
Struck by moving object	4,104	494	1,700	691	736	356	*112
Handled or stepped on rough object	2,209	*138	827	367	441	*231	*93
Caught in, pinched, or crushed between two objects	1,202	*258	375	*145	*195	*130	--
Came in contact with hot object or substance	996	*288	*104	*187	*265	*133	*17
Over-time lifting or exertion	2,354	--	*106	623	937	817	*71
Twisted or stumbled	2,890	*19	1,103	541	693	434	*98
Complication of medical /surgical procedure	2,655	873	477	*385	373	*278	*150
Other	3,410	634	877	398	842	493	377
Unknown	8,623	1,008	1,371	1,812	2,322	1,200	719
	Number of persons injured per 1,000 persons per year						
Total persons injured	311.9	393.6	391.8	386.2	289.2	209.7	211.8
Moving motor vehicle[2]	23.2	*7.0	19.8	56.1	26.3	16.0	*9.7
Injured person outside vehicle	2.2	*1.6	*2.8	*2.7	*2.4	*1.0	*1.9
Injured person inside vehicle or getting in or out	20.7	*5.4	16.3	52.7	23.9	14.8	*6.8
Collision between 2 or more motor vehicles on roadway	11.6	*3.6	*8.9	27.8	13.0	12.3	*4.0
Ran off roadway	2.8	--	*3.3	*8.9	*3.0	*0.5	--
Accident not on roadway	2.2	*0.9	*1.8	*7.3	*2.7	*0.4	*1.0
Other and unknown	4.0	*0.9	*4.3	*9.5	*5.2	*1.3	*1.8
All other accidents	288.7	386.6	372.0	330.1	262.8	193.7	202.1
Uncontrolled fire or explosion	*0.5	--	--	*1.4	*1.1	--	--
Discharge of firearm	*0.8	--	*0.8	*0.6	*2.1	--	--
Nonmotor vehicle in accident	5.9	*10.4	17.5	*2.1	*2.0	*0.5	*1.2
Machinery in operation	5.2	--	*7.0	13.4	9.6	*7.4	*1.8
Cutting or piercing instrument	20.6	*14.9	34.6	26.6	17.1	13.6	*9.7
Foreign body in eye, windpipe, or other orifice	7.2	*10.9	*9.1	*12.0	4.5	*3.9	*2.9
Injury caused by animal or insect	13.3	25.2	18.5	*7.6	10.9	9.0	*10.7
Fall on stairs, steps, or from a height	21.7	52.8	27.7	15.6	16.1	13.3	*14.4
All other falls	45.3	63.3	63.0	39.0	25.3	33.4	69.2
Bumped into object or person	27.8	24.0	50.8	36.8	21.9	14.8	*9.0
Struck by moving object	20.2	23.5	38.1	24.8	15.6	8.5	*5.7
Handled or stepped on rough object	11.4	*13.7	18.5	13.2	9.2	*5.5	*4.7
Caught in, pinched, or crushed between two objects	5.9	*12.3	8.4	*5.2	*4.1	*3.1	--
Came in contact with hot object or substance	4.9	*13.7	*2.3	*6.7	*5.5	*3.2	*0.9
Over-time lifting or exertion	11.6	--	*2.4	13.2	19.5	19.5	*3.6
Twisted or stumbled	14.2	*0.9	24.7	19.4	14.5	12.3	*5.0
Complication of medical/surgical procedure	12.1	41.5	10.7	*11.0	7.8	*6.5	*7.6
Other	16.8	30.1	15.2	14.3	*7.3	11.7	19.2
Unknown	42.4	47.5	30.7	65.1	33.4	28.6	34.6

[1] Excluded are persons with injuries involving neither restricted activity nor medical attention.
[2] Includes injured persons not reported as inside or outside the vehicle.

NOTE: Relative standard errors of estimates for this table are found on chart on page 38.

When a figure is shown with an asterisk in front of it, it is presented only for the purpose of combining with other cells. An estimate will have a relative standard error less than 30 percent when the aggregate is at least 350,000.

Source: Vital Health Statistics, Series 10, No. 105, National Center for Health Statistics, 1971-72.

Falls are the accidents which most frequently happen to all children under the age of 16. As can be seen from TABLE IV, in the 0 to 6 year old group 2,446,000 falls were reported by the National Center for Health Statistics for 1971 to 1972 of which 1,112,000 were falls from stairs, steps or some height. In the 6 to 16 year old group, falls accounted for 4,048,000 injuries in 1971 to 1972 with 1,236,000 of those occurring as a result of falls from stairs, steps or some height. As previously mentioned, one of the greatest risks in falls, particularly in young children, is of injury to the head. Although head injuries usually involve only a 0.5% mortality, the incidence of nonfatal injury in early childhood is high.[39] One specialist in head injury says:

> "Forty percent of all traumatic cases in childhood involve head injuries alone or combined with other injuries. The peak age incidence is in the second year of life, with males outnumbering females 2:1. Peak seasonal incidence is in the spring and summer months during the late afternoon and early evening hours."[40]

Although most injuries resulted in complete recovery, head injuries do carry the risk of unfortunate sequelae such as subdural hematoma (blood clot over the surface of the brain) and convulsive disorders.[41]

A year long study of emergency room visits to the University Hospitals of Cleveland from 1964 to 1965[44] and a 1966 report of a study of members of the Kaiser Health Plan in Berkley--Oakland, California[43] corroborate the high incidence of falls and the peak age of 2 to 3 years of age. Falls per se, accounted for over 45% of the injuries in the Cleveland study and over 56% of the injuries in

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[39] Hammil, op. cit.

[40] Ibid.

[41] Ibid.

[42] Robert Izant and Charles Hubay, "The Annual Injury of 15,000,000 Children" in Williams and Wilkins, The Journal of Trauma, Vol. 6, No. 1, 1966

the California study. Lacerations, contusions and abrasions, burns, fractures and dislocations were the most common injuries. The Cleveland authors pointed out that the risks inherent in falls and other accidents are not only to life and limb but are also to a child's emotional well-being. The psychic trauma involved in stitching up even minor lacerations on young children, various hospital procedures such as skull x-rays, treatment of severe burns, setting of fractures and broken bones, as well as the acute, possibly long-lasting trauma of hospitalization for the young child has been well documented elsewhere.[44] In terms of promoting the child's emotional welfare, the under five age group would possibly be the age that we would most want to keep out of hospital emergency rooms and pediatric wards.

Implications for Day Care

The risks of fatal and nonfatal accidental injury outlined above again suggest that attention will need to be focused on (1) structural characteristics; (2) staff behavior monitoring of the environment; (3) child-staff ratio; and (4) planning for emergency preparedness. As we move into this age group, there are also implications for health and safety education of the children.

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[44] Pat Azarnoff, "Centers of Learning in a Pediatric Clinic Playroom" Journal of The Association for Children in Hospitals, 4:1.

T.P. Millam, "The Hospital and the Preschool Child", Children, 1970, pp. 171-176.

E.K. Oremland and J.D. Oremland (eds.) The Effects of Hospitalization on Children: Models for Their Care, C.C. Thomas, Springfield, 1973.

Pat Azarnoff, et. al., The Preparation of Children for Hospitalization, Final Report to the National Institute of Mental Health, 1975.

J. Robertson, Young Children in Hospital, Barnes and Noble, N.Y., 1970.

J. Bowlby, J. Robertson and D. Rosenbluth, "A Two-Year Old Goes to the Hospital" Psychoanalytic Study of the Child, 1952, 7:82.

Children 5 to 14 Years of Age

The following were the leading causes of death in this age group in 1974.[45]

	# Deaths
Accidents	8,102
Motor vehicle	4,124
Drowning	1,580
Fires, Burns	526
Other	1,872

The death rate from drowning in this group is higher than in any other age group: about 5 per 100,000.[46] This has been attributed to the school-age child's greater freedom from restriction by adults, as they move farther away from home to play.

Although injury rates in some categories decline, there is a steep rise in the number of 6 to 16 year olds injured per 1,000 persons in this age group per year in each of the following four categories of accidental injury:

(1) Cutting or piercing instrument (34.6 persons per 1,000);

(2) Bumped into object or person (50.8 persons per 1,000);

(3) Struck by moving object (38.1 per 1,000); and

(4) Twisted or stumbled (24.7 per 1,000)[47]

In comparing the rates of these kinds of injuries across all age groups, it can be seen that the highest rates are found in the 6 to 16 year old age group. Given the NEISS[48] data showing the clustering of sports-related injuries in this age group (see page 53), it seems reasonable to assume that these injury rates reflect in part the school-age child's participation in athletic activities.

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[45] Accident Facts, p. 72.

[46] Ibid.

[47] See Table on p. 42.

[48] NEISS-National Electronic Injury Surveillance System, of the U.S. Consumer Product Safety Commission (a further

Implications for Day Care of School Age Children

The implications mentioned above in connection with other age groups would be relevant to this group as well. In addition, however, we believe that the particular nature of accidental injury and death in this age group implies the need for caregiver ability to be aware of the school age child's activities outside the home or after-school center and to work with parents in determining the conditions under which the child is participating in sports, e.g., where the child can ride bicycles or what kind of precautions are taken while playing football, whether suitable protective equipment is used, whether there is adequate supervision of facilities for safety hazards and traffic control near play areas as well as sufficient adult management of injuries when they happen.

Other Considerations in Accidental Injury

Several reviewers of our interim report informed us of potential injury producing circumstances which are specific to different climates. For example, we are told that in the cold winters of New England, one of the more common injuries is wet skin contact with freezing cold metal swings.[49] Heavy snow on foot paths and roadways is also a problem. Disasters of great magnitude threaten other areas of the country. In the South and Midwest, tornadoes pose risks for children in day care, and licensing authorities have been trying to help day care providers plan for tornado conditions.[50] Flooding can be expected in some areas while earthquakes occur in others. We strongly support the concept of emergency preparedness and disaster planning as a necessary feature in controlling for health and safety risks in day care.

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[49]Personal communication from Nina Sazu, Director of New Hampshire Child Care '76, June, 1976.

[50]Personal communication from Nancy Travis, Southern Regional Education Board.

This planning must be adapted to local conditions and resources, but as stressed to us by James Kerr of the Department of Defense, the planning is probably the most important resource for preparedness.

Others have reminded us that accidental injury and death is not always the result of unforeseen, unintended actions--but that child abuse, often labeled as "accidental injury" also results in visits to emergency rooms and even death.[51] It is quite plausible that some of the figures in our statistics on accidents actually represent child abuse or neglect as a cause of injury or death. We agree that child care provider awareness of the causes and symptoms of abuse and neglect should be heightened and that child abusers should not be permitted to be professional caregivers in day care settings.

Product Related Injuries

Another way to evaluate risk of injury to young children in day care is to examine the statistics from the National Electronic Injury Serveillance System (NEISS). NEISS is a computerized system that gathers information about product-related injuries seen in 119 statistically selected hospital emergency rooms in the conterminous United States.[52] This allows for projections about national rates of injury, limited to those injuries which are product-related and treated in emergency rooms. A severity ranking is also determined, based on eight severity categories. All injuries fall into one of these categories and a predetermined numerical value is given to each category. Both frequency and severity are factors taken into consideration by the Commission in identifying products which require further investigative study.

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[51] Personal communication from David Friedman, M.D. of the Region IX Child Abuse and Neglect Resource Project and James A. Harrell of the OCD National Center for Child Abuse and Neglect.

[52] Conterminous is the term used by the U.S. Consumer Product Safety Commission to describe those states which are contiguous.

As a result of these investigations, both commission developed mandatory standards and industry developed voluntary standards are imposed on new products.[53] From the NEISS data, the U.S. Consumer Product Safety Commission estimated that in 1975 506 per 100,000 0 to 4 year olds and 1,158 per 100,000 5 to 9 year olds sustained product related injuries serious enough to require medical attention.[53a]

The Most Dangerous Products

As one might imagine, there are large amounts of data available from NEISS. One useful way to approach these data, particularly with implications for day care in mind, is to examine those products that have "earned" the highest Age Adjusted Frequency Severity Index (AFSI) obtained by multiplying the estimate of injury incidences by mean severity of injuries and adjusting for the under-representation of children in the general population. The top twenty most dangerous products based on NEISS findings and categorized as to what percentage of product-related injuries occur to children in the 0 to 4 and 5 to 14 age categories are summarized in chart form on pages 49 and 50.

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[53] Personal communication from Robert Shane, Ph.D., Staff Scientist with the National Academy of Sciences, June, 1976.

[53a] Data derived from computer print-out of the NEISS data system provided in July, 1976 by Lorraine G. Desbordes, Ph.D., Consumer Product Safety Commission.

Most Hazardous Products For Children Under 14

Rank	Product & Code	Cases Reported F/Y to Date (4/30/75)	% of Victims In Relevant Age Groups		AFSI[54] Index
			0 - 4	5 - 14	
1	Bicycles (1202)	13,825	12.7	61.4	30.584
2	Stairs (1892)	18,791	16.7	13.6	21.023
3	Lawnmowers (1401) (power & unspecified)	453	-	12.3	11.977
4	Football (1211)	13,362	-	29.8	11.719
5	Baseball (1204	6,130	1.9	41.3	11.052
6	Playground Equipment (1241)	3,498	35.6	39.3	10.463
7	Tables (0645) (non-glass & unspecified)	6,024	36.5	16.3	9.462
8	Beds (0601)	4,685	44.5	25.0	7.206
9	Nails, Carpet Tacks, etc. (1819)	8,971	5.5	43.1	7.147
10	Chairs, Sofas & Sofa beds (0602)	999	46.2	14.2	6.827
11	Swimming Pools (1231) & Related Equipment	636	5.7	34.3	6.346
12	Basketball (1205)	10,283	.2	20.9	6.278
13	Liquid Fuels (0910)	755	32.5	24.1	5.450
14	Floors & Flooring Materials (1807)	3,249	21.8	23.6	5.421
15	Cleaning Agents, Caustic Compounds	1,525	32.3	8.0	5.383
16	Architectural Glass Including Glass Doors (1815)	5,973	8.1	25.9	5.323

(Cont'd)

[54]Obtained by multiplying the estimate of injury incidences by mean severity of injuries and adjusting for the under-representation of children in the general population.

Rank	Product & Code	Cases Reported F/Y to Date (4/30/75)	% of Victims In Relevant Age Groups		AFSI Index
			0 - 4	5 - 14	
17	Snow Skiing (1216)	2,430	0.8	16.1	4.278
18	Storage Furniture (0604)	2,865	31.0	29.3	4.140
19	Bathtubs & Shower Structures	1,555	23.2	10.7	3.548
20	Household Chemical Products, Other (0921)	527	35.5	8.1	3.543

Discussion

The above chart reveals that for children in the 0 to 4 age group, playground equipment, tables, beds, upholstered furniture, liquid fuels, cleaning agents, storage furniture and household chemicals are the most dangerous products. For children in the 5 to 14 age group, nearly all the "top twenty" products are quite hazardous, with the exception of cleaning agents, household chemicals, and possibly bathtubs. For both groups, injuries involving stairs, while not necessarily more frequent, deserve attention because of their high rating on the AFSI Index. Finally, playground equipment has the dubious distinction of being an extremely hazardous product for both age groups of children. The following sections will offer some findings of indepth analysis of playground equipment-related injuries, as well as those other products, hazardous to children, for which we presently have reports from indepth investigations conducted by the U.S. Consumer Product Safety Commission.

Swings, Slides, Seesaws and Other Playground Equipment

The sixth most dangerous product, playground equipment, is the one that affects young children most directly. Of the 3,498 playground equipment-related injuries reported in FY '75, 35.6% occurred in the 0 to 4 year age group and 59.3% occurred in the 5 to 14 year age group.[55]

It must be remembered that this figure of 3,498 represents the number of injuries actually reported from only 119 hospital emergency rooms compared with the nationwide estimate of incidence described by the U.S. Consumer Product Safety Commission—118,000 persons receiving treatment in emergency rooms for playground equipment-related injuries in 1974.[56] Of this estimate, approximately 45,000 injuries occurred on a public playground and 41,000 on home equipment. Over 75% involved children less than 10 years of age.

What Is It About Playground Equipment That's So Hazardous?

Indepth studies revealed that the primary hazard pattern involves falls from the equipment. Other hazards were: (1) being struck by a piece of moving equipment; (2) rough edges; (3) protruding bolts; and (4) entrapment of extremities in equipment. At home, injuries most often occurred on swings and swing sets; on public playgrounds, they most often occurred on slides and climbing apparatus. These studies also showed that no adult was present in 142 of the 146 cases studied. In two of the three fatalities involving home equipment, the children were completely alone. Two girls, aged 2 and 4, strangled after the poncho each was wearing caught on an upright portion of the slide railing.

An additional analysis of 24 death certificates revealed that 15 children died at home and 9 in public playgrounds. Eleven deaths were a result of falls, 1 resulted from hanging, 3 deaths resulted from being struck by a part of the swing set.

Product characteristics associated with injury which were discussed by the U.S. Consumer Product Safety Commission report include protruding bolts, improper anchoring and type of surfacing underneath the equipment. A substantial number of falls occurred

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[56] Hazard Analysis: Playground Equipment, April, 1975, U.S. Consumer Product Safety Commission.

on concrete, asphalt or hard-packed dirt surfacing. The Commission does not, at present, seem to offer analysis of the relationship between surfacing and injury or death.[57]

Beds

Beds are a hazardous product, with most injuries caused by a fall from the bed, striking a bed part or fabric ignition. Forty-three indepth investigations of bed-related injuries showed that nearly all injuries resulting from falls from beds occurred to children under five, and particularly those under three. Both age groups were injured when they struck a bed part, with exposed metal frames being a particularly hazardous feature of beds.[58]

Bunk beds are another product hazardous to both age groups. Over 69% of the NEISS-reported injuries relating to beds in FY '75 (7/74 to 5/1/75) occurred among children under the age of 14. Based on NEISS data, the Consumer Product Safety Commission estimates that approximately 12,500 injuries related to bunk beds were treated in emergency rooms in FY '74. Children under 15 suffered 83% of these injuries (under 5 received 35% of injuries and the 5 to 9 age group received 36%). While laceration was the most common diagnosis, 74% of all the injuries in the under 5 age group occurred to the head. The product deficiencies related to injuries were: lack of an adequate guard rail, exposed metal side braces and ladder instability.[59] Children using bunk beds in day care (particularly in family day care) are significantly at risk, with that risk

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[57] All the above is derived from Hazard Analysis: Playground Equipment, April, 1975.

[58] "Summarization of 43 In-Depth Investigations of Product-Related Injuries: Beds, Including Spring Frames", U.S. Consumer Product Safety Commission, May 7, 1974.

[59] [illegible] Bunk Beds, January, 1975.

increased if the just mentioned bunk bed deficiencies are present.[60]

Products That Seem Particularly Hazardous to Children Over 5 Years

Bicycles

In the first 10 months of FY '75 (7/1/74 to 4/30/75) 13,825 injuries related to bicycles have been reported. Children aged 5 to 14 are most vulnerable (61.4% injuries occurred in this group) although a surprising percentage of injuries (12.7%) occurred in the 0 to 4 age group (surprising because this category focuses only on bicycles, excluding tricycles).[61] An analysis of 17,411 injuries showed the peak age to be between 8 and 10 years of age.[62] Indepth investigation of 120 injuries revealed that loss of control was involved in 76 cases, with mechanical and structural problems accounting for 20 cases. Forty-two death certificates were analyzed, with the result that 76% of the deaths were shown to have been caused by head injuries.[63]

The reader is asked to notice the pattern of falls related to the injuries associated with playground equipment, bunk beds and bicycles and the frequency/severity of injury to the head.

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[60]The Licensed Family Day Care Association of New York State provided some interesting comments on the problem of beds in family day care: "Bunk Beds: Local regulations prohibit children from sleeping on a mattress or air mattress on the floor. However, this type of sleeping arrangement (with all precautions taken, e.g., out of draughts, no dampness, etc.) is often much safer for an active child in a day care home. It can also be healthier than sleeping on another child's bed. The size of the provider home often prohibits extra beds, but a possibility of foldaway cots would be feasible if money could be allocated for the purchase of same."

[61]U.S. Consumer Product Safety Commission, Consumer Product Hazard Index, FY 1975.

[62]NEISS News, April, 1975.

[63]Hazard Analysis: Bicycles, July, 1973.

Football

13,362 football-related actual injuries are reported for the period 7/31/74 to 4/30/75; 29.8% occurred in the 5 to 14 age group and none in younger children.[64] An analysis of football-related injuries in 1973 showed a "clustering" of injuries around the 10 to 14 year age group, with 5,146 injuries reported. 701 injuries in the 5 to 9 year age group and 39 in the 0 to 4 age group were also reported.[65] Again these numbers represent injuries reported from only 119 hospital emergency rooms.

Baseball

6,130 baseball-related injuries were reported in FY '75; 41.3% occurred in the 5 to 14 year age group and 1.9% occurred in the 0 to 4 age group.[66]

Glass

Architectural glass is the final product of the "top twenty" for which we can offer results of indepth analysis. Among injuries related to glass doors, windows, etc. children under 15 years of age were subject to the greatest risk of injury from glass doors. Frequency of injury was most apparent in the act of opening or closing a door or window, but severity of injury was associated with a victim's falling against a door, e.g., stumbling against a door while playing. The risk for young children, who are already at great risk of injury from falls, needs to be considered, particularly in view of (a) the Commission's assertion that "a large pointed sliver of ordinary annealed glass can be as dangerous as a stiletto", and (b) their explanation that the

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[64]NEISS News, April, 1975.

[65]Hazard Analysis: Football, July, 1974.

[66]"Summary Analysis of Baseball Activity and Related Equipment", Consumer Product

use of safety glazing could have prevented or reduced the severity of most of these accidents. Windows close to the floor are a particularly hazardous architectural feature unless they are protected by a cross bar or other barrier.

Other Hazardous Products Used By Children

Toys and child nursing equipment and supplies furnish examples of products designed especially for use by children.

Toy Related Injuries

Indepth analysis by the Commission of injuries over a three year period by toy type provides the following table, with hazardous toys listed in decreasing incidence of injury. The estimated total numbers of toy-related injuries serious enough to require medical attention for each of three years are encircled. As the figures show, there are increasing numbers of these kinds of injuries.

TABLE V

Estimated Toy Related Injuries
For a Three Year Period, 1973 - 1975

Product	Product Code	Estimated Number of Injuries		
		FY 75	FY 74	FY 73
	All Products	7,620,262	6,934,069	6,284,959
	CPSC Jurisdiction	6,953,286	6,267,717	5,697,328
All Toys		(172,729)	(149,405)	(142,923)
Regulated Toys		37,832	35,784	40,761
Skates, Roller	1308	59,835	49,297	50,557
Tricycles	1301	11,864	13,689	10,595
Toy Cars and Trucks and Non-Flying Airplanes	* 1305	11,192	9,089	10,692
Juvenile Sports Equipment	1341	10,913	11,141	1,069
Skateboards	1333	10,670	2,980	3,613
Wagons, Toy	1328	5,621	6,363	6,749
Other Riding Toys, Not Powered, Not Including Bicycles or Tricycles	1331	4,336	4,670	2,319
Toy Balls, Only Balls Designed for Use by Children	1324	4,118	5,839	5,239
Flying Devices, Not Gas or Rocket Powered, Frisbee	1317	3,816	1,911	882
Toy Box or Chest	1353	3,236	2,622	2,906
Rocking Horses, Hobby Horses & Similar Child Carrying Toys, Not Wheeled	* 1327	3,111	3,992	5,587
Crayons, Children's Paint Sets and Chalk	1382/1351	2,006	879	1,177
Toy Guns and Other Toy Weapons Without Projectiles	* 1311	1,739	3,273	3,319
Marbles	1354	1,623	1,697	1,827
Caps and Cap Toys	* 1348	1,469	803	903
Blocks, Stacking Toys, Pull Toys and Similar Items	1326	1,384	938	1,014
Flotation Toys	1370	1,338		
Toy Home Equipment, Including Sinks, Sewing Machines and Non-Heating Stoves, Ovens and Irons	* 1321	1,308	859	1,702
Gasoline or Other Fuel Powered Toys, Including Model Airplanes and Cars	1306	1,299	662	876
Pogo Sticks	1310	1,089	1,087	1,022
Toy Guns and Other Toy Weapons With Projectiles	1312	1,068	1,583	1,711
Models and Their Construction Materials	1318	1,012	530	864
Non-Mechanical Dolls and Toy Animals	* 1302	927	622	1,358
Toys, Not Otherwise Specified	1300/1381	18,756	13,687	12,859
All Other Toys	**	13,046	11,232	13,951

* Product codes having one or more banned products.
** There are 58 product codes included in this category of which 9 contained one or more banned products.

SOURCE: U.S. CONSUMER PRODUCT SAFETY COMMISSION
Bureau of Epidemiology

Toy Chests

Indepth analysis of toy chest related injuries showed that the highest percentage of these injuries occurred in the 2 to 4 year old group. Toy chest characteristics that seemed most related to injury were sharp edges and corners, defective or improperly assembled hinges and lift-type lids.[67]

High Chairs and Cribs

The Commission estimates that from 7/1/72 to 6/30/73, 7,000 children and adults received high chair-related injuries serious enough to require hospital emergency room treatment (most frequently from falls relating to head injury).[68] With regard to cribs, estimates in FY '74 were approximately 9,100 injuries treated in emergency rooms, most occurring as a result of falls, although suffocation and strangulation as a result of entrapment of body parts also occurred as previously discussed in the section on mechanical suffocation (page 37)

Baby Walkers

Baby walkers are also hazardous products, with an estimated 3,700 persons receiving related injuries treated in emergency rooms in FY '73. As before, the head is the body part most affected, with tipping over, falling down stairs and finger entrapment as the chief causative factors of injury. Cited in indepth investigations were parental assumptions that infants didn't need much supervision while in walkers.[70]

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[67] Hazard Analysis: Toy Chests Related Injuries, January, 1975.

[68] Hazard Analysis: High Chairs, July, 1974.

[69] Hazard Analysis: Cribs, December, 1975.

[70] Hazard Analysis: Baby Walker Injuries, April, 1974.

Infant Seats

In FY '73, 1,000 injuries serious enough to require emergency room treatment were estimated to have occurred. Falling from elevated surfaces, wire supports becoming dislodged and restraining devices not being used are the most prevalent etiologic factors.[71]

The following summary of injuries related to Child Nursery Equipment highlights the prevalence of falls in injury situations:

Product	Estimated Injuries Requiring Emergency Room Treatment	Accident Patterns On In-depth Investigation
Cribs	9,103 (FY '74)	Falls, entrapment
High Chairs	7,000 persons injured (FY '73)	Falls
Baby Walkers	3,700 persons injured (FY '73)	Tipping over, falls
Infant Seats	1,000 injuries (FY '73)	Falls

Implications of NEISS Data for Day Care

Two major conclusions can be drawn: (1) many products regularly used in day care are inherently hazardous; and (2) falls are a common cause of product-related injury in children. The first conclusion has implications for consumer education. In fact, the U.S. Consumer Product Safety Commission distributes an attractive packet of free, readable brochures on safety tips in purchasing and safe use of many of the products mentioned above. Every day care provider should be given this packet and urged to read and apply its teaching. It may be necessary to ban some of the products when hazardous usages or conditions prevail.

Secondly, we stress that the extremely high incidence of injuries in childhood demonstrated by these data supports the need for accident prevention research. The data also must be considered in the decision about adequate staff-child ratio.

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[71] Hazard Analysis: Infant Seats, March, 1974.

How many adults are needed to "cover" a playground in order to protect children effectively from falls? How many children can a family day care mother watch in order to insure protection from injury inside or outside the home?[72] Staff training in patterns of supervision as a way of minimizing risks may also be considered. How do you teach children to avoid risk without overprotecting them?

Finally, the NEISS data has implications for structural characteristics in day care: e.g., the playground surfacing, the nature of glass used and the architectural design of windows and doors, the use of barriers to prevent children from entering unsafe areas, etc. Accident prevention researchers suggest that the modification of objects themselves (e.g., change in the design of caps on aspirin bottles, installation of tempered glass when replacements are made, increase in the fire-resistance of walls by attaching gypsum wallboard to the existing less fire-resistive wall, etc.) has been shown to be the most effective way of reducing accidental injury and death.[73]

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[72] Studies conducted by Richard Fiene, Psychologist with the Appalachian Regional Commission in Pennsylvania may offer some insight here.

[73] Patricia Barry, "Individual Versus Community Orientation in the Prevention of Injuries", Preventive Medicine, 1975, 4:47-56.

W. Haddon and S. Baker, "Injury Control" draft of a chapter for Preventive Medicine, 2nd ed. in press, February, 1976.

INFECTIOUS DISEASE

Basic Facts About Infectious Disease

Infectious disease results from the interplay between a host, his/her environment and an agent which can produce infection. In the day care setting we are concerned with the children and adults who share the day care environment where many infectious agents reside.

Understanding the interplay among these three elements provides a basis for control of infectious disease.

Bacteria, viruses, fungi and parasites are the common agents of infections in children and adults. Bacteria are small organisms which can be seen with an ordinary microscope. Bacteria like warm dark, moist places and are usually cultivated in materials which initially do not contain living, growing cells. Bacteria are usually identified in cultures grown in the laboratory. Common diseases caused by bacteria are "strep throat", boils, impetigo, urinary tract infections, conjunctivitis (pink eye), and certain pneumonias. Antibiotics interfere with the growth and/or survival of bacteria and are most effective when used against specific susceptible bacteria.

Some of the diseases produced by bacteria can be prevented by exposure of people to modified forms of bacteria avoiding exposure to enough bacteria to become infected and by produced toxins (e.g., tetanus and diphteria) or to bacterial fragments (e.g., pertussis or whooping cough) so that the body can make antibodies to fight off the disease when exposed to the particular bacterial infection involved.

Viruses are smaller than bacteria and can grow only within living cells. Viruses cause colds, "flu" and most of the common infections of childhood like chicken pox, measles (rubeola), german measles (rubella), mumps and polio.

Viruses are not killed or inhibited by antibiotics. The most effective preventive measure currently available against common viral diseases consists of infecting peop with modified, weaker forms of the virus so that their bodies will learn how to fight off the strong form of the virus should they come into contact with it. This principle is the basis for presently available vaccines against measles, mumps, german measles and poliomyelitis.

Fungi grow well in moist, warm places and they multiply by forming spores or by budding. Athlete's foot and ringworm on other parts of the body are examples of common fungal diseases. There are effective medicines against fungal disease. These work best and have a longer-lasting effect when the conditions favorable to fungal growth are removed.

Parasites are organisms which live in, or on animals and people. They frequently are attached in some way to a part of the body or prefer one part of the body or one type of body tissue to others. Pinworms, ascarids and other roundworms are common parasites in children. A few of these parasites are also commonly carried by pets.

The common infections of childhood are usually categorized by the part of the body which is involved in the infection as well as by the type of agent (bacteria, virus, fungus, etc.) which causes the infections. Some infections affect nearly every part of the body and are called systemic infections.

Children are especially vulnerable to certain infections because of several anatomic and developmental features of childhood. First, the small size and anatomic relationships in children provide short distances between body locations where infectious agents normally reside innocuously and areas where infectious agents cause disease. For example, the middle ear space is easily infected

by bacteria from the nose and throat because of the short drainage tube connection between the two (eustachian tube). Second, children develop their immunity to infectious agents by becoming infected with the infectious agent itself or with a modified form of the infectious agent. Third, many usual developmental behaviors expose children to circumstances which are favorable to acquiring infection. Children often mouth unclean objects. Children enjoy playing in dirt, sand and other sites where animals defecate and deposit parasite eggs. They bump, bruise, scrape and injure their body tissues frequently. Children are careless about where they put their body secretions and excretions and think nothing of handling and putting near their eyes and mouths objects which have been recently contaminated by the secretions and excretions of other people. Close contact among adults and children, the kisses, hugs and lap-sitting which are desirable and necessary features of day care, or any kind of group play situation in which children participate is another reason why infectious illnesses are more frequent in children. Close contact between children and the objects in the environment also promotes the person to person or person to object to person transmission of parasilitic diseases like head and body lice.

The common infections of childhood are listed in descending order of frequency with which they require a visit to a physician in TABLE VI.

The commonest problem by far is upper respiratory infection, with middle ear disease being the most common cause of visits to physicians because of illness for children under 17 years of age. Children under the age of 6 have small, short, almost horizontal eustachian tubes (canals which drain from the middle ear into the back of the nose). Because of this anatomical arrangement, their eustachian tubes are easily blocked by the swelling and secretions which usually accompany mild infections. The accummulation of secretions and absence of normal aeration of the middle ear space through the eustachian tube in infections provides

a warm, moist, low-oxygen environment perfectly suited to the growth of common disease causing viruses and bacteria.

Another factor which favors middle ear disease in infants and toddlers is the feeding position frequently assumed by infants while drinking liquids. Breast fed infants are normally held in an inclined position in which the child's ear and eustachian tube opening are slightly elevated above the mouth and throat. With bottle feeding in the hands of a person unaware of the problem, and almost inevitably with bottle propping and self-bottle feeding in bed, the child is placed on his back which favors the entry of liquid food and/or the secretions from the naso pharynx through the eustachian tube into the middle ear.[74] Since the secretions of the naso pharynx normally contain some bacteria and viruses which are not welcome visitors in the middle ear, the potential for middle ear problems is greatly increased.

Middle ear infections hold particularly serious consequences for young children. Children commonly experience recurrent and/or persistent hearing losses as a consequence of middle ear infection. It has been estimated that at any one time, between 20% and 30% of preschool children suffer from significantly impaired hearing[75] and that approximately 30% of childhood deafness is a consequence of infectious disease.[76] Hearing impairment can be associated with significant delays in speech and language development, immature social skills and increased likelihood of academic failure.[77]

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[74]W.G. Beauregard, "Positional Otitis Media", J.Ped., 1971, 79:294.

[75]David M. Lipscomb, "How Frequent Are Ear Lesions and Hearing Defects Among U.S. Children?", Clinical Pediatrics, March, 1973, 12:125.

[76]Edward N. Baily, et. al., "Screening in Pediatric Practice", Pediatric Clinics of North America, February, 1974, 21:123.

[77]Ibid.

TABLE VI

COMMON INFECTIONS OF CHILDHOOD REQUIRING A HEALTH PROFESSIONAL VISIT

(See text for elaboration and data sources of elements outlined in this table)

n of Infection[1]	Reason Why Children in Day Care Are Vulnerable to the Infection	Possible Consequences of Unmitigated Infection	Preventive Measures Which Could Be Employed By Day Care (structural features and behaviors)
pper Respiratory (URI) le Ear . Throat	1. Anatomical features of a child's body including size and relationship of body parts to one another. 2. Need to develop immunity through experience with infectious agents. 3. Normal pattern of development of immune responsiveness. 4. Exposure to contaminating agents through play and daily activities. 5. Feeding position of infants. 6. Improper maintenance humidity, temperature and ventilation of children's environments.	1. Hearing loss is associated with significant delay in speech and language development, immature social skills and increased likelihood of academic failure. 2. Days of illness which restrict child's available to developmental stimuli. 3. Disability related secondary problems, e.g., loss of taste, increased appetite. 4. Death from progression of disease into other body parts, e.g., meningitis.	1. Handwashing to reduce the amount of infectious material transferred between individuals. 2. Environmental humidity control. 3. Environmental temperature control. 4. Ventilation. 5. Surface sanitation especially in child care, kitchen and bathroom locations. 6. Use of safe food and drink, including safe water supply and food handling techniques. 7. Sensible management of minor illnesses to minimize the drain on body defenses including fluid intake, rest, and body temperature control. 8. Early medical treatment to prevent progression to more serious disease when symptoms of ear pain, persistent fever, cough, diarrhea, vomiting or lethargy are present. 9. Appropriate use of clear fluids during illnesses. 10. Proper feeding techniques for infants. No bottles in bed or bottle propping permitted. 11. Health education, child, parents, staff and volunteers to assure that all who deal with the child are aware of significant preventive measures and the rationale for them. 12. Staff health pre-employment and annual re-examination for presence of chronic infections, problems like recurrent staphylococcal infections, tuberculosis and hepatitis. 13. Proper selection of pets to avoid known infectious disease carriers like water turtles and hamsters. 14. Sanitary waste disposal. 15. Stability of child and adult population in close contact with one another.
intestinal (GI)	1. Large body surface area relative to body mass results in greater proportionate body fluid losses through the skin. 2. Careless toileting behaviors, limited control of feces and vomitus when ill.	1. Same as 2 above. 2. Dehydration. 3. Disability related secondary problems e.g., weight loss, alteration of growth patterns. 4. Death	

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r of highest to lowest incidence of illness from the U.S. National Center for Health Statistics "The National Ambulatory Medical Survey: 1973 Summary.", United States, May, 1973-April, 1974 "Vital and Health Statistics Series 13" and "Current Estimates from the Health Interview Survey, United States-1970", and "Vital and Health Statistics Series 10." Supported by data from Vernon E. Duckworth "Quarterly Summary Report No. 26" of the Minnesota Systems Research, Inc., April-June, 1974 (Summary of data derived from 53 children and youth projects from across the U.S.) Table I.

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TABLE VI (Cont'd)

Type of Infection	Reason Why Children in Day Care Are Vulnerable to the Infection	Possible Consequences of Unitigated Infection	Preventive Measures Which Could Be Employed By Day Care (structural features and behaviors
ystemic infections which are ot presently preventable e.g., chicken pox)	1. No immunity and almost assured exposure to agent.	1. Discomfort. 2. Disability.	1. Sensible management of symptoms. 2. Health education for parents to avoid complications of secondary infection.
kin	1. Frequent trauma to the skin provides entry portals for infection. 2. Children under two do not have full protective skin functions. 3. Adults often overdress children. 4. Close contact between people and things in early childhood intimacy.	1. Disability. 2. Discomfort. 3. Disfigurement.	1. Appropriate bathing related to season and actual need for hygiene. 2. Avoidance of overdressing and overheated environments. 3. Protection from thermal trauma from the sun and from other heat sources. 4. Use of physical barriers (such as covering of lesions) to prevent contamination of surfaces and spread of infection to others 5. Restriction of contact with contaminated substances. 6. Early appropriate use of drugs and techniques which dilue the concentration of infectious agents and aid body defenses.
Other mucous membrane covered structures (conjunctive, genitourinary structures)	1. Anatomical features of a child's body e.g., girl's short urethara. 2. Developmentally appropriate activities lead to hand-eye, hand-vagina, etc. contamination.	1. Chronic disease and tissue - injury which can diminish body reserves for life.	1. Handwashing to reduce amount of infectious material transferred between individuals. 2. Surface sanitation. 3. Early medical treatment as for upper respiratory and G.I. infections. 4. Health education as for upper respiratory and G.I. infections
Preventable systemic diseases (measles (rubella), polio, diphtheria, whooping cough, tetanus)	1. Exposure to agents which remain prevalent in the environment.	1. Disability. 2. Disfigurement. 3. Death.	1. Immunization. 2. Health education about need for updating immunization throughout life. 3. Pre-employment and annual re-examination of staff for immunity to or presence of active or recurrent infections such as T. hepatitis, staphlococcal infections.

The delicate mucous membrane tissues line the nose, throat, ear, eye, trachea, bronchi and air sacs of the lungs. In addition, they line the entire length of tubes and sacs which make up the gastrointestinal tract (from mouth to anus). These surfaces are peculiarly susceptible to infection for several reasons. Resistance to invasion of mucous membrane tissue is dependent on the integrity of the moist mucous layer which serves as a protective barrier to invading infectious agents, on the presence of antibodies secreted into the mucous barrier by the child's immune system, on the presence of infection fighting cells and on effective functioning of a variety of mechanisms which remove foreign substances up and out, or down and out of various mucuous membrane lined tubes and spaces of the body. If these barriers are not functional for any reason, infection is likely to occur.

Skin acts as a guardian of the internal integrity of the entire body and a physical barrier to infection. This barrier is dependent on an intact surface (no cuts of scrapes), on the presence of bacteria-repelling secretions and on the water loss/water conservation functions associated with the body's need to conserve or lose heat. Any damage to the skin can predispose to infection of the skin and the underlying structures it protects. The skin of young children (under 2 1/2 years of age) may not be fully responsive to external heat, making infants and toddlers especially vulnerable to overheating.[78] Frequent bathing with soap removes the bacteria repelling and water conserving lipid materials from the skin making winter itch and ashy skin a hallmark of increased vulnerability from too much bathing. These same skin secretions are produced in increased amounts

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[78]C.F. Bargoon, "The Skin" in Nelson Textbook of Pediatrics, ed. Vaughan and McKay, W.B. Saunders, 1975, pg. 1514.

when the environment is warm, less when the environment is cold. In summer, too much heat will cause so much production of these protective materials that they clog the very tiny openings of the hair follicles; thereafter trapped sweat cannot escape to the surface, making tiny red bumps known commonly as heat rash. When bacteria are trapped with the sweat and mixed with the excess lipids, the condition for skin infections are nearly perfect.

Excessively dry air, a high dose of contaminating materials, body overheating and poor hydration of body tissues all predispose to weakened resistance and to decreased ability to recover from infection. Children are often overdressed, overheated, underexposed to infectious agent diluting fresh air and provided with inadequate amounts of liquid by uninformed adults.

In addition to the need to develop immunity to infectious agents, young children do not normally have an adult level of mucous membrane antibody until around age six.[79] The less than full adult level protection to infection makes young children experience more frequent apparent symptoms of illness. Young adults experience fewer symptomatic infecious illnesses because of prior exposure to infectious agents, body maturity and increased body size.

It is inevitable that young children will experience certain infections. What is not inevitable is the degree of illness which develops as a result of infection. Lowering the dose of infecting agent and increasing the degree of support to normal body resistance factors will lessen the severity of the infection as expressed in symptoms and complications. This concept is the key to the control of infectious disease in day care programs.

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[79] Charles A. Janeway, "Maturation of Immunologic Function" in Nelson Textbook of Pediatrics, ed. Vaughan and Mckay, W.B. Sauners, 1975, pg. 479.

Relevant Research Data on Infectious Disease in Day Care

Scientific information about the actual incidence of infections in day care is scanty and primitive. The pioneers in United States studies are Drs. Loda, Glezen, Clyde and Collier of the Frank Porter Graham Center in Chapel Hill, North Carolina. Their studies have shown no difference in the incidence of respiratory illness among children at a day care center serving one month to five year olds and a comparison population receiving home care.[80] They further demonstrated that with adequate staffing and staff education about care of children, ill children could be cared for in the day care setting without increasing the risk of serious infections. Their center routinely permitted ill children to attend but the children received total health care from the center staff. These results must be interpreted in light of the large amount of health professional consultation available at the center, the influence of Dr. Ann Dehuff Peters and other health experts on the development of sanitation routines and fostering of preventive health behaviors by staff. A review of the health policies used by the Frank Porter Graham staff reveals a high level of consciousness about control of cross-infection, use of sanitation measures and the importance of adequate indoor and outdoor space for each child. The latter is presumed to be related to the concentration of contaminants in the environment. The role of prevention was emphasized by Frank Loda in a 1968 communication to Dr. Arnold Gilbert at Mt. Zion Hospital in San Francisco:

> "It has been the advent of specific vaccines and improvement in general levels of sanitation rather than the antibiotics that primarily caused the change in (children's) mortality figures (since 1920)....the illnesses that cause the greatest amount of morbidity are viral rather than bacterial and these also can be handled only by prevention not by specific therapy.[81]

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[80] Frank A. Loda, et. al., "Respiratory Disease in Group Day Care", Pediatrics, 1972, 49:428.
J.H. Dingle, G.F. Badger and W.S. Jordan, Jr., Illness in the Home, Cleveland, Ohio: Western Reserve University Press, 1964.

[81] Frank A. Loda, Letter to Arnold Gilbert, M.D., Project Assistant Director, Mt. Zion Hospital and Medical Center, San Francisco California, September 19, 1968.

Recent studies at Frank Porter Graham have demonstrated the predominance of two specific viruses as the common causes of symptomatic respiratory disease: respiratory syncytial virus and parainfluenza virus, type III. Identification of these specific agents is an encouraging first step toward the development of vaccines which might prevent some of the six to eight yearly respiratory infections suffered by most young children.[82]

The studies at Frank Porter Graham have been carefully constructed according to rigorous scientific criteria. As more studies are reported, the study designs must be examined to assure that they too have been rigorously designed and executed. A recent report from Sweden which purported to show increased days of respiratory illness and more febrile illness among children in day care is an example of a study where variables relating to the study outcomes were not controlled.[83] Reviewers of this study noted that the researcher was basically comparing the infectious disease patterns of only children with those of children with siblings or day care peers. The only conclusion which should have been drawn was that from an infection point of view, being an only child is a good thing.[84]

Despite Frank Porter Graham's excellent record, several unpublished reports of outbreaks of serious infectious disease in other day care centers give cause for concern and impetus for further research.[85]

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[82]Albert Collier, M.D., Paper Prepared for FIDCR Work Session on April 27, 1976, (See Appendix D).

[83]Katherine Stranggert, "Respiratory Illness in Preschool Children with Different Forms of Day Care", Pediatrics, February, 1976, 57:191.

[84]"Respiratory Illnesses in Day Care Centers: Comment" in Pediatric Alert, March, 4, 1976, 1:5:18.

[85]Sharon Rae of the George Loving Clinic, Dallas Texas, stated in a personal communication in July, 1976: "In a Dallas, Texas infant day care program, four children developed serious life-threatening illnesses from Hemophilus Influenza, Type B infection in 1975-76."(H. Influenza is a bacterial agent not to be confused with the virus which causes flu)...."40% of the day care children who were well were found to be harboring the bacteria in their nasopharynx in contrast with 3% of well children who were expected to carry the bacteria. After

The importance of sanitation routines is emphasized by a report of a salmonella outbreak in a day care center for physically handicapped children in Tennessee in 1973.[86] Although these children may have had an increased vulnerability to infection, the outbreak was easily brought under control by application of a few simple principles of personal hygiene. However, not all disease problems can be managed as easily. The same epidemiologist who handled the salmonella outbreak studied an outbreak of epdemic karatoconjunctivitis (pink eye) among children with behavior disorders that was more difficult to control. In this outbreak, control was achieved only after one classroom of children were separated from the school.[87] Dr. Ann DeHuff Peters, a day care medical consultant has noted several important elements for any program of infectious disease control.[88]

"1. Personal hygiene of the adults, such as careful handwashing;

2. Environmental control, including proper sewage disposal, care in handling diapers and other contaminated clothing or bedding, proper cleansing of eating utensils, etc.; and

3. Above all, the elements of sound health education for parents, staff and children...."

She also states, "We need to have an informed staff in each day care program, a source of sound medical consultation, and liberal employment policies to allow adult staff with the 'trots' to be off duty."[89]

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86 Bernard Guyer, M.D. Letter to Ann DeHuff Peters, M.D., Day Care Consultant, LaJolla, California, December 6, 1973.

87 Ibid.

88 Ann Dehuff Peters, M.D. Response to Bernard Guyer, M.D., EIS Medical Epidemiologist State of Tennessee Dept. of Public Health, January 24, 1974.

89 Ibid.

A 1974 outbreak of influenza virus at the Frank Porter Graham Center was carefully studied. Cultures were obtained from both sick and well children at the center every other week; additional specimens were collected when the children were ill. In addition, blood samples were routinely collected at six month intervals and checked for antibody content. This monitoring of the infectious agents and the children's response to them revealed that during the influenza outbreak, 48% of the children under two years of age and 40% of the children two to ten years of age gave evidence of being infected. This pattern in a day care center is very similar to attack rates for influenza among children not in day care; the proportion of children infected has been reported between 13% and 67% under a variety of different living and study conditions. Significantly, in the day care outbreak, 50% of the children who were infected by the virus had no symptoms of illness. Of the children who were ill, 40% had middle ear infection. Drs. Klein, Collier and Glezen who did the st speculated that children who are apparently well, but infected may play a significant role in spreading disease. Although Drs. Klein, Collier and Glezen did not make the point, it might be noted that their study presents a strong argument for maintenance of sanitation routines at all times, since so many asymptomatic infections occur.[90]

The incidence of communicable tuberculosis has dropped significantly in recent years. Because of the low incidence and non-communicability of childhood TB, pediatricians are beginning to question the validity of frequent TB screening of children. Adults who have active TB can communicate the disease

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[90]Joel Klein, et. al., "An Influenza B Epidemic Among Children in Day Care", unpublished manuscript.

to children and have a greater likelihood of having been exposed to TB at some time in their lives. This risk is illustrated by a reported TB outbreak in a family care home in New Hampshire. TB testing of all adults regularly at the day care facility is important to prevent exposure of day care children.[91] In the New Hampshire case, the husband of a family day care worker was diagnosed as having TB only after he had exposed 36 children cared for over a period of years by his wife in their home. As a result of his exposures, nine children developed tuberculosis and two children developed positive TB tests, but did not have any clinical disease. We have received a similar report of documented cases of day care children infected by an adult with active TB from the Kansas Department of Health and Environment.[92]

Screening day care workers for TB is an inexpensive way to avoid such tragedies and should be required as a part of a pre-employment health assessment for the foreseeable future. Other adult infections in day care staff, such as recurrent boils or chronic bronchitis might be presumed to be hazardous for children. Since the extent of risk in each case would need to be assessed by a health professional, a requirement for such a health assessment to include appraisal for communicable infections is reasonable. Such a health assessment can include evaluation for other diseases with work related implications such as presence or absence of chronic disease requiring medication, hearing impairment, and exercise tolerance.

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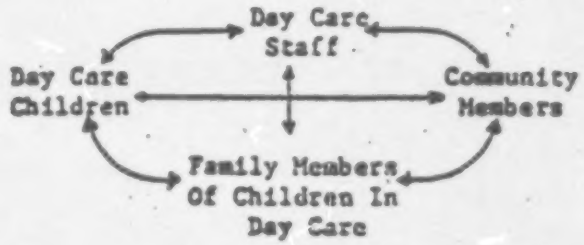
[91] Vladas Kaupas, "Tuberculosis in a Family Day Care Home", JAMA, May, 1974, 228:851.

[92] Personal communication from Shirley A. Norris, Child Care Licensing Director, July, 1976.

One further report of day care infection warrants comment. In 1975, the U.S. Center for Disease Control reported on five outbreaks of shigella in day care centers between 1972 and 1975.[93] They noted that attack rates in day care settings appear to be higher than those in primary schools and that the intimacy of day care settings calls for use of preventive measures aimed at staff, children and the day care environment. The report described inadequate handwashing facilities, poor handwashing practices, poor food service practices, inadequate refrigeration and careless diaper changing practices were associated with four of the five outbreaks. The disease was not limited to the day care children, but also spread to involve their families and other members of the community.[94] This issue of multiple potential risk groups was raised by the North Carolina Group in their influenza study.[95] Thus, the following four groups should be considered at risk from infections in day care program participants: (1) Other children in the day care program; (2) Staff; (3) Families of infected children; and (4) The community as a whole. It should be emphasized that there is an interlinking relationship among all four risk groups since infection in any one of them can provide the entry point for transmission of disease to the others (see diagram):



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[93] Jack B. Weissman, et. al., "Shigellosis in Day Care Centers" The Lancet, January, 1975, p. 88.

[94] Ibid.

[95] Op. Cit., Joel D. Klein, et. al.

Studies of the epidemiology of other infectious agents (diplococcus and mycoplasma) in day care settings have also been reported.[96] These reports support the principles previously stated that children in day care are not exposed to increased amount of infection if good hygiene, sanitation and health care measures are employed.

Preventive Measures Which Could Be Employed By Day Care Programs

These measures fall into two basic interrelated categories: structural features of the day care environment and behaviors, with the latter far more significant than the former. Although a full exposition of infection control measures is beyond the scope of this paper, several examples will be given:

1. Handwashing—is a first line preventive measure. A number of studies have shown that unwashed hands are the primary carriers of infectious agents from the environment to people and from person to person.[97] Further, studies of surgical preparation techniques have demonstrated that the washing time and frequency of washing rather than the type of soap are critical factors in determining how much reduction of infectious agents is accomplished by handwashing. Clearly, to be practical, handwashing facilities must be near where hand contamination is likely to happen. Barriers like doors, halls and stairs not only make handwashing more burdensome, they also force choices between sanitation and adequate supervision. In addition, they enhance the possibility that some of the contaminated materials to be washed from a child or adult's hands will be deposited on surfaces along the route between the source of contamination and the handwashing location.

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[96] Frank A. Loda, M.D., "Occurrence of Diplococcus Pneumonia in The Upper Respiratory Tract of Children", J. Ped. December, 1975, 87:1087.

[97] Katherine Sprunt, et. al., "Antibacterial Effectiveness of Routine Hand-Washing", Pediatrics, August, 1973, 52:2:264-270
Stephen Gehlbach, et. al., "Spread of Disease by Fecal-Oral Route in Day Nurseries", Health Services Reports, April, 1973, 8:4:320-322

Day care is very often housed in structures built for other purposes or at the least, without handwashing concerns in mind. Alternative measures to expensive addition of plumbing installations need to be considered. For example, some of the disposable dry wipe products might be used in areas like playgrounds and indoor facilities with inadequate sinks to reduce the amount of contaminated materials left on the skin if handwashing facilities are not close-by.

Children must learn by adult example to wash before eating and after using the toilet. Covering the mouth and nose when sneezing and coughing is worse than doing nothing if the hands are not washed afterward. It is better to turn away from people and sneeze or cough on the floor since the droplets rapidly fall, dry and are less likely to reach someone else than if carried to others via the contaminated hand.

2. Stability of Staff and Children--In a paper prepared for our work session on April 27, 1976, Dr. Albert Collier described very expressively the implications for day care of what the Frank Porter Graham Center has demonstrated about the "paths" of infection transmission through groups of young children and new caregivers:

> "Young children in group day care should exist in a stable environment. The staff should be as constant as possible and the children in the program should not change frequently. There are psychological reasons why this is important but it also has important implications in terms of infectious disease. We feel that stability of the population helps to achieve the kind of balance within the population which reduces the incidence of illness. The constant introduction of new children (and new staff) with new agents and without immunity to the agents already present probably increases the amount of disease."

We concur with Dr. Collier. In our experience, significant turnover of staff in day care is usually traceable to stresses associated with working long hours with many children for low pay. It has also been our observation that one preventable reason for large changes in the child population is frequent fluctuat in eligibility guidelines and other regulations.

3. Space--Again using what research has demonstrated about the spread of respiratory infection, Dr. Collier provides us with some implications for day care:

> "We have to assume that there is going to be some transfer of bacteria and viruses from one child to another but what we want is that this exchange be a minimal amount so that the child receiving the challenge dose can handle it effectively without developing a serious illness. This is the goal and there are several ways this can be accomplished. If you will watch young children playing in an open space, you will see them move rapidly from one child to another. They usually do not have prolonged interactions with any other children. They are like particles moving about in air bouncing off one another. If you put them in the same playpen together, or confine a large number in a small space, then they, of necessity, come in contact with each other over a long period of time. The cheapest big space is the outdoors and maximum use should be made of the outdoor play area. This is particularly true in cold weather when crowded and overheated indoor spaces are at their worst....
>
> It is important that children should not sleep in the same crib or cot in order to prevent having a heavy exposure to one another. The beds should be properly spaced so that each child has 200 cubic feet of air space during rest periods. This provides enough space to prevent the air passage of infectious agents in large droplets from one child to another. With this much space, the large droplets settle to the floor without reaching the next bed."

4. Proper feeding and food handling techniques--need to be employed. Bottle propping and bottle in the bed feeding should not be permitted. Children who cannot feed themselves should be held in breast feeding position even if bottle fed. Children who can feed themselves should finish their bottles sitting up or slightly reclining to avoid the eustachian tube reflux which results in middle ear disease. Food handling practices should, wherever possible, be regularly inspected by a public health sanitarian.

5. Adequate humidification, temperature control and ventilation--of the environment enhances the child and adult's mucous membrane resistance and recuperative functions. Humidity and room temperature are related. As cool, low humidity winter outdoor air is artificially heated, the amount of moisture the air can hold is increased. As outdoor air is heated, it will extract moisture from any water source available including skin and mucous membranes, which are consequently

dried by exposure to the heated low humdiity air. The reverse problem occurs in the summer when hot, humid outdoor air impedes the normal cooling evaporation of water from the skin. When a child's skin moisture cannot easily evaporate, the child's body tends to overheat. If the child has an infection induced fever at the same time, the compoundeffect of increased heat production and decreased effectivenss of body cooling mechanisms can result in harmful body temperature levels.

6. Appropriate bathing--is an essential factor in reduction of skin infections. Bathing only two to three times a week in winter and frequent (two to three times a day) rinse offs of heavily contaminated sweaty skin surfaces in the summer are helpful in reducing bacterial and fungal skin infection. The increased frequency of bacterial infection of the skin in the summertime (impetig is a well known phenomenon to day care workers.

7. Appropriate handling of heavily contaminated materials--such as nasal and toilet tissues, diapers, bandages, soiled underwear and vomitus is important to preve large doses of bacteria and viruses from being delivered to susceptible individuals. Day care facilities need to designate clean-up locations separate from food service locations to minimize the risk that food, hands and utensils will be contaminated by invisible high doses of infectious agents.

8. Immediate cleansing of wounds--reduces the number of organisms which are allowed to remain in the broken skin barrier so that the body defenses are not overwhelmed by large numbers of rapidly multiplying invaders.

9. Protection where possible through appropriate use of immunizations--Protection available through immunization has made rapid progress in the last quarter century. Unfortunately, public use of immunization has not been universal. The table on page 77, provided by the Center for Disease Control, shows the

levels of immunization since 1964. An alarmingly high proportion of the child population are not protected against polio, measles (rubeola) diphtheria, whooping cough and tetanus.

TABLE VII

PERCENT OF POPULATION 1-4 YEARS OF AGE WITH SPECIFIED DOSES OF POLIO, DIPHTHERIA-TETANUS-PERTUSSIS (DTP), MEASLES, RUBELLA, AND MUMPS VACCINES UNITED STATES 1964-1975

YEAR	Polio 3+ Doses	DTP 3+ Doses	Measles 1 Dose	Rubella 1 Dose	Mumps 1 Dose
1964	78.6	76.0	24.0	**	***
1965	73.9	73.9	33.2	**	***
1966	70.2	74.5	45.5	**	***
1967	70.9	77.9	56.4	**	***
1968	68.3	76.5	58.8	**	***
1969	67.7	77.4	61.4	**	***
1970	65.9	76.1	57.2	37.2	***
1971	67.3	78.7	61.0	51.2	***
1972	62.9	75.6	62.2	56.9	***
1973	60.4	72.6	61.2	55.6	34.7
1974	63.1	72.9	64.5	59.8	39.4
1975	64.8	75.2	65.5	61.9	44.4

**Rubella vaccine was licensed in June 1969

***Mumps vaccine was included in the questionnaire in 1973.

Source: U.S. Immunization Surveys, 1964-1975

Except for tetanus, control of these systemic diseases has a two-fold implication for day care: first is the protection of the child from the risk of death or catastrophic complications of the infections; the second is the protection of the group from infection carried by an unprotected infected individual. Parents are frequently unaware of which immunizations their children have had and for which diseases boosters are needed to assure protection. It is not enough to have day care personnel copy the child's immunization record onto a day care program form. They must be able to tell whether the record indicates that the child is adequately protected. Mumps and rubella vaccines are not as critical because their significance to the pre-adolesent child is less than that of the other infections listed and the need for immunizations of children against them is still being examined.[98]

8. Appropriate referral for medical management of infection—is a vital adjunct to infectious disease control in day care. It is unnecessarily expensive both in time lost from work by parents and in medical personnel cost to require that children with mild viral diseases be seen by health professionals. On the other hand, ear pain, progressive persistent cough and fever, severe diarrhea and progressive skin infections are treatable, serious conditions which do require medical evaluation and management. Day care personnel must be able to distinguish situations for which medical intervention is urgently required from those which can be postponed or which do not require more than supportive measures to promote the child's recovery. A training regime is indicate

[98]American Academy of Pediatrics, "Report of the Infectious Disease Committee", 1974.

Summary: Infection and Day Care

From the research we have examined, it seems reasonable to conclude that the risk of infection for young children in day care is an obvious one—but also one that can be minimized by the kinds of policies and actions just described. This is a difficult area. For many people, simply the words "infectious disease" are frightening, especially when we don't know that those words can be used to describe anything from a common cold to an outbreak of meningitis. In addition, much research is still needed in the area of infectious disease (along with continuing education of pediatric health care providers) before this whole area can be further demystified for the general public. No one knows better than day care providers how frequently health care sources give conflicting and sometimes erroneous advice. (As in the case of keeping sick children home in order to minimize contagion.) Pediatric health care providers—and even researchers in the area of infectious disease—just don't know all the relevant facts yet about infection transmission. Inevitably this causes stress for caregivers and parents. We still don't understand how to prevent the common cold, for example, an important issue for day care!

In the meantime, it is significant to note that no major, widespread epidemics of infectious disease have been reported in any large numbers of day care settings. The fact that some outbreaks of shigella, H. Influenzae B, and even tuberculosis have been reported in individual day care settings, however, does argue for an educated awareness of infectious disease on the part of day care providers and careful attention to what is currently known about the transmission of infection.

It is also relevant to point out the reports of the significant contribution that day care has made to uncovering the presence of infectious

conditions in children and improving their health status.[99] Many children helped b day care programs might have suffered progressively more serious complications of infectious disease. The current contribution of day care programs to the prevenci of infectious disease cannot be overlooked.

THE QUIET CONDITIONS

The last area of risk which we will discuss in this paper involves conditions which can go undetected for long periods of time with negative consequences for the child's healthy development. Examples of these "quiet conditions" include iron-deficiency anemia, hearing loss, lead absorption, and dental caries.

It is extremely difficult to locate national figures on the prevalence of "quiet conditions" because their presence is most often identified through screening or through surveys that use a screening technique. Different screening criteria may be used at different places for the same age population of children. For example, the criteria defining iron deficiency anemia in young children may vary slightly and even slight variations will change the numbers of children identified as suffering from iron-deficiency anemia. Consequently, we have looked for commonalities and organized the relevant information as well as possible, given the complexities of all the different sources of information available at present. The chart on page 81 and 82 represents some of our findings.[100]

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[99] Report of the Southeastern Day Care Project on Health Objectives, sent to us by Nancy Travis of the Southern Regional Education Board.
Jeanne Hurd, "A New Perspective on Head Start Health Care", Health Services Reports, Aug.-Sept., 1972, 87:2.

[100] We are indebted to the Guide For Screening--EPSDT Medicaid, by Drs. William Frankenburg and Frederick North for much of our information. (See Bibliography for complete reference)

THE QUIET CONDITIONS

Condition	Prevalence in Children	Risks If Not Identified
Nutritional Problems (including anemia, obesity, growth retardation.)	High in low-income populations Moderate in high-income populations[1]	When due to undernutrition or child neglect, will continue and may even worsen. Undernutrition results in increased susceptibility to the effects of infection and physiologic changes in gastrointestinal and endocrine function which are manifested in apathy and loss of energy with subsequent failure to develop physical skills or to make use of opportunities for learning.[2] Over nutrition in children has been correlated with adult obesity which in turn relates to cardiovascular and endocrine disease (e.g., diabetes) in adulthood.
Dental Caries and Other Dental Problems	High in low-income populations[3] Moderate in the general population	Caries become more extensive. Loss of teeth. Increased dental disease. Leads to nutritional problems which, in turn, feed dental problems. Source of bacteria for seeding infections to other parts of the body.
Lead Absorption	3.5 million children in one to six year old group are at risk.[4]	Brain damage. Possibe death.
Developmental Disabilities[5] (e.g., learning problems)	More than 17% of all children. Prevalence increases with age and low-income.	Condition may worsen. Impairs learning.

[1] See section on Nutritional Problems on page 83 of this paper for further explanation.

[2] J.D.L. Hansen, et. al., "What Does Nutritional Growth, Retardation Imply", Pediatrics, January, 1971, 47:299.

[3] See section on Dental Disease, page 91 of this paper for further explanation.

[4] Donald Hopkins and Vernon Houk, "Federally Assisted Screening Projects for Childhood Lead Poisoning Control", AJPH, May, 1976, 66:5:485.

[5] Mentally retarded, seizure disorders, neuromotor disabilities, school learning

Condition	Prevalence in Children	Risk If Not Identified
Hearing Loss	20% of five year olds diminishing to 2-3% of ten to eleven year olds.[6]	May impair normal intellectual functioning, language learning, perception of environment.
Sickle Cell Trait	8% of American Blacks. Smaller percentage of people of Mediterranean origin.	Unidentified presence of trait result in (unexpected by parent reproduction of offspring with disease.
Eye Problems	5% of preschool population. 25% of school-age population.[7]	Some untreated conditions resul in partial or total loss of vision (blindness). Visual problems interfere with normal learning processes.

[6]Using impedence audiometry. Denzil Brooks, "The Use of the Electracoustic Impedence Budge in the Assessment of Middle Ear Functions", J. Int. Audiol. 1969, 8:563.

[7]National Society for the Prevention of Blindness, 1970-71.

With regard to the "quiet conditions", there are two ways in which children may be at risk in day care: (1) if the day care program is doing nothing to prevent the natural adverse course of these "quiet conditions"; and (2) if the environment of the day care program is such that children are exposed to the risks or to increased risks of developing these "quiet conditions". Some examples of problems in which a child might suffer in both ways are nutritional problems, dental disease and lead absorption.

Nutritional Problems

The Ten-State Nutrition Survey identified deficiencies in iron, vitamin A and riboflavin as the most common nutritional problems in children under 16 years of age.[101] (See Charts on pages 84 and 85.)

[101] Ten-State Nutrition Survey, 1968 - 1970, DHEW Publication No. (HS) 72-8134 Vol.

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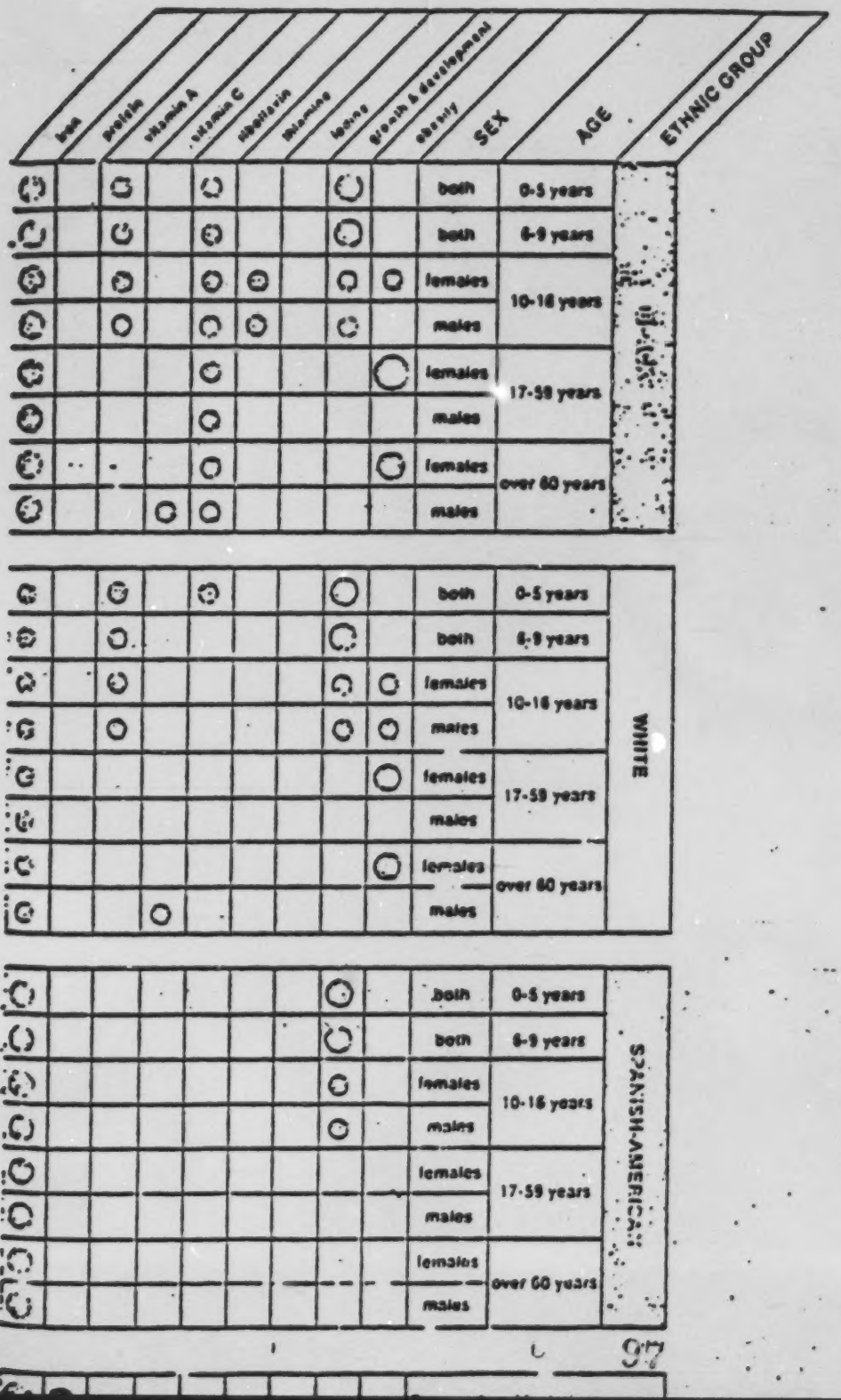
THE TEN-STATE NUTRITION SURVEY 1968-1970

HIGH-INCOME-RATIO STATES California, Massachusetts, Michigan, New York (and New York City), Washington



A unique feature of this survey is its finding that although these deficiencies are greater in low-income children,[102] they are present in nearly all children. The following chart[103] summarizes what these survey results imply about risks to healthy development and about the nature of the American diet in childhood.

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[102] Other studies support the finding of iron deficiency anemia in low-income children
Paul Zee, "A Nutritional Survey of Preschool Children from Impoverished Black Families", JAMA, August, 1970.
Data on children aged 0-5, screened during fiscal year 1974-5. Source: Mississi State Dept. of Health, Medicaid Screening Findings, Annual Report, Fiscal Year 1974-1975, mimeo.
Data on children aged 0-5, screened July-December, 1975. Source: South Carolina Dept. of Health and Environmental Control, "Child Health Services—Medical Contacts Report", computer print-out, January 15, 1976.
Data on children 0-4, screened January 1974-March 1975. Source: Health Services Research Institute (Un. of Texas Health Science Ctr.), EPSDT Demonstratic Projects: An Interim Evaluation, April 1974-March, 1975.

[103] Taken from Key Nutrients, U.S. Dept. of Agriculture (S/N 0100-1492), 1971.

Nutrient	Why Needed	Source
Iron	1. Combines with protein to make hemoglobin, the red substance of blood which carries oxygen from the lungs to muscles, brain, and other parts of the body. 2. Helps cells use oxygen.	Liver, kidney, heart, oysters lean meat, egg yolk, dry bean dry peas, dark-green leafy vegetables. dried fruit, whol grain and enriched bread and cereals, and molasses.[1]
Vitamin A	1. Helps eyes adjust to dim light. 2. Helps keep skin healthy. 3. Helps keep lining of mouth, nose, throat, and digestive tract healthy and resistant to infection. 4. Promotes growth.	Liver; dark-green and deep yellow vegetables such as broccoli, turnip and other leafy greens, carrots, pumpki sweat potatoes, winter squash apricots, cantaloupe; butter, fortified margarine.
Riboflavin	1. Helps cells use oxygen to release energy from food. 2. Helps keep eyes healthy. 3. Helps keep skin around mouth and nose smooth.	Milk, liver, kidney, heart, lean meat, eggs, and dark leafy greens.
Ascorbic Acid (Vitamin C)	1. Helps hold body cells together and strengthens walls of blood vessels. 2. Helps in healing wounds. 3. Helps body to build bones and teeth.	Cantaloupe, grapefruit, oranges, strawberries, broccoli, brussels sprouts, raw cabbage, collards, green and sweet red peppers, mustard and turnip greens, potatoes cooked in jacket, and tomatoes

[1] In early infancy, the primary sources of iron are iron-enriched formula and infant cereals.

We ask the reader to note the relevance of iron and riboflavin to oxygenation of muscles and brain cells. Oxygenation is one of the primary sources of energy for play and learning.

Other surveys support the finding of iron-deficiency anemia as a severe nutritional problem, and also conclude that calcium and absorbic acid deficiencies as well as low daily intake of basic calories are common among low-income children.[104] Calcium, which builds and maintains teeth and bones and contributes to muscle and nerve tissues, is primarily found in milk, cheese and dark green leafy vegetables. Low intake of calories was found by Owen, Kram, et. al. to be a result of insufficient food supply for low income children.

We ask the reader to note the efficacy of milk, lean meat, eggs, whole-grained cereals, fresh fruit and vegetables in preventing these deficiencies. In our view, the available evidence suggests that these foods should have an important place in federally funded day care.

There have only been a few studies of nutritional aspects of day care programs. A study of food served in 11 day care programs in Texas [105] showed that children in care received more than 60% of the Recommended Daily Allowances (RDA) of most key nutrients, with the notable exception of iron, magnesium,

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[104] G. Owen, K. Kram, P. Garry, et. al., "A Study of Nutritional Status of Preschool Children in the United States, 1968-70", Supplement to Pediatrics, April, 1974, Part II, 53:4.
G. Owen and Kathryn Kram, "Nutritional Status of Preschool Children in Mississippi", Journal of the American Dietetic Association, June, 1969 Vol. 54.

[105] Feeding Programs for Preschool Children in Texas, The Texas Agricultural Experiment Station, Texas A & M University, College Station, Texas, September, 1975.

Vitamin E and Thiamine. The results of this survey are shown in the following graph.

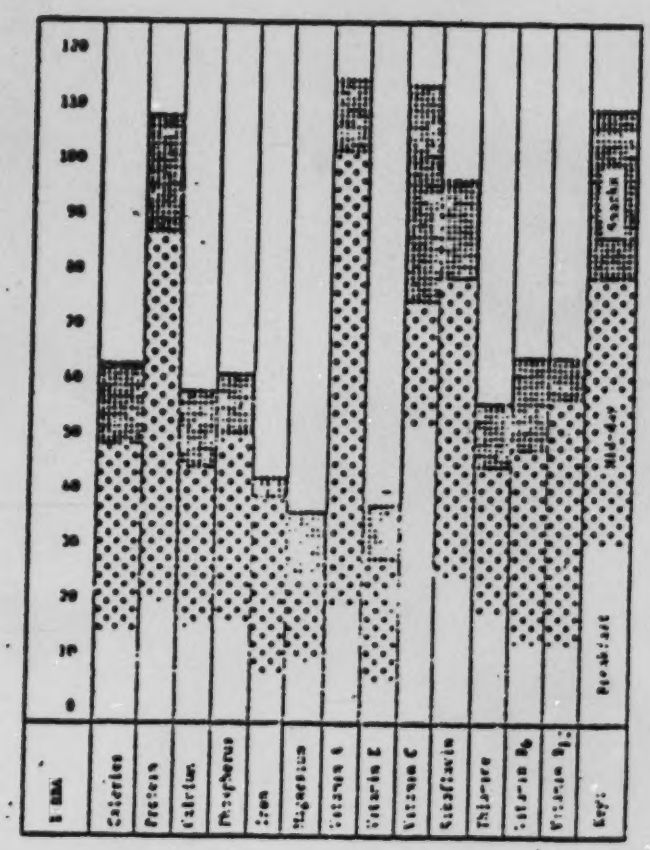

Figure A. Mean nutrient content in meals served at 11 child feeding centers for one 5-day week.

Two studies, conducted at one day care site in Philadelphia[106] corroborate that even in a day care program attempting to provide a balanced diet, children showed deficiencies, especially iron. (Both these studies matched day care children with non-day care children; analysis showed that day care children nearly always fared better nutritionally than the non-day care children.)

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[106] Festus Adebonojo, M.D. and Susan Strahs, "Vitamin Nurtriture in Black, Urban Day Care Children", The American Journal of Clinical Nutrition, June, 1974, 27:559-564.

"The State of Nutrition in Urban Black Children in the U.S. and the Role of Day Care Services in the Prevention of Nutritional

One reason for these deficiencies may be the common exclusive use of processed infant foods. We agree with Dr. Stephan Ladisch that the vitamin and fiber content of processed infant foods are lower than in fresh foods.[107] Processed foods, particularly baby foods, are more costly than fresh foods.[108] Finally, producers of processed foods may enhance their profits by "skimping" on iron-rich meat, an ingredient likely to be more expensive than "fillers".

The Texas child care feeding study also determined that fresh fruits and some vegetables (fried potatoes, corn and carrots) were well accepted by the day care children studied. In fact, these foods were less frequently rejected than cake.[109]

Based on the data available, it seems reasonable to conclude that (1) the children presently eligible for federally funded day care are likely to be at risk of iron and vitamin deficiencies, and should be screened particularly for evidence of iron-deficiency anemia;[110] and (2) that federally funded day care programs must pay particular attention to vitamin and iron-rich feeding of infants and children in their care.

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[107] See Dr. Ladisch's paper on Nutrition, in Appendix D of this paper.

[108] Ibid.

[109] Op. Cit., Feeding Programs for Preschool Children in Texas, p. 10.

[110] See Tick Sheet and Key, a summary of when and why different screening techni should be conducted in childhood, pp. 96-105 of this paper.

Dental Disease

Many people are used to thinking of dental caries as a problem primarily of the school-aged child. Children aged 5 to 9 years are quite vulnerable to dental problems, with 59,320,400 fillings and 8,084,980 extractions estimated as needed by American children in this age group.[111] But children in the first year of life are also at risk of developing severe dental problems. "Bottle-mouth" caries, occurring in babies who are put to bed with bottles containing any liquid except water[112] causes decay usually most severe on the upper front and side teeth. As with the other hazards of in-bed bottle feeding,[113] "bottle-mouth" caries can be prevented by feeding babies before putting them into their beds.

Dental caries also occur in preschool children. Surveys of dental disease in Head Start children have demonstrated that between 60% to 70% of the preschool children examined had caries.[114] Head Start children in Boston had on the average 3.38 decayed and 0.18 filled teeth per child.[115] A survey of preschool children in 15 federally funded Florida day care centers[116] found that 61.5% of the 4 year old children had dental caries. The results of this survey are summarized in graph form on page 92.

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[111] Philip Easton and Wesley Young, Development of Dental Care Programs for the Children of Great Britain and the United States, Un. of Kentucky, 1968.

[112] Melba Rabinowitz, "Bottle Mouth Cavities", Children Today, March-April, 1974.

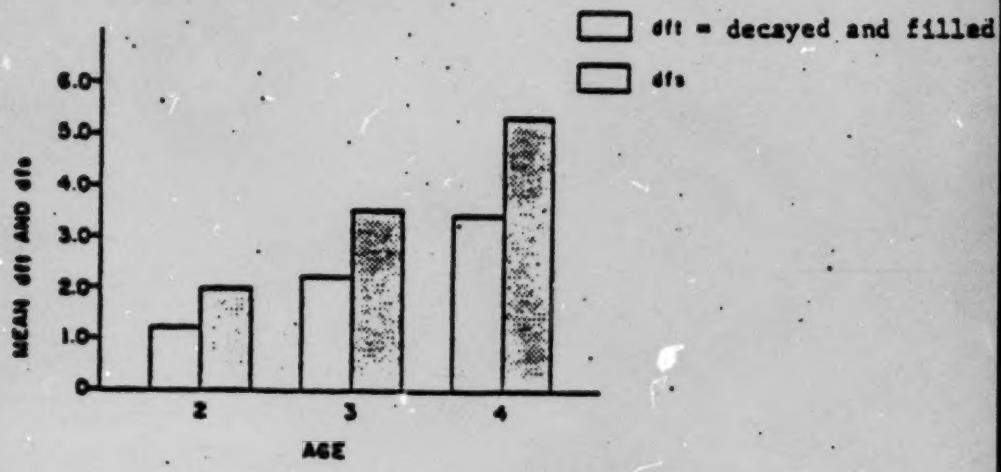
[113] See earlier section of this paper on Infections.

[114] "A Survey--Dental Services in Project Head Start, Summer 1967" NIH, Feb., 1969. Anthony Jong, et. al., "Utilization and Cost of Dental Services for Preschool Children in Boston's Head Start Program", JPHD, 1968, 28:2: 126-133. Blanche Ross, "A Comparative Study of Four Dental Payment Mechanisms in Head Start Program", AJPH, Nov. 1971, 61:11.

[115] Op. cit., Anthony Jong.

[116] Anthony Conti, et. al., "Caries--Experience of Preschool Children in Selected [illegible] JPHD, Fall 1974, 34:4.

Figure 1. Dental Caries Experience (Mean dft and dfs) in Black Preschool Children By Age



Source: "Caries-Experience of Preschool Children in Selected Day Care Centers", p. 237.

The reader is asked to note the prevalence of caries in two year old children and the rapid increase in caries between ages two and three. By four years of age, the mean dft (decayed and filled teeth) for the total sample was 3.40 teeth. Finally, we ask the reader to examine these findings in the light of the numbers of extractions estimated to be needed by all children 0 to 4 (4,929,9 and 5 to 9 (8,084,980).

Dental caries is a preventable disease. Fluoridation, daily removal of plaque (a sticky substance containing bacteria which clings to the teeth) and reduction of foods high in sugar and carbohydrates are crucial elements in prevention of caries. Day care programs are in an ideal position to contribute to prevention, since they can (1) demonstrate and institute regular daily tooth-brushing, even among toddlers; (2) provide or help parents arrange for early and regular dental screening; and (3) effectively limit access to refined sugars during a substantial part of the day. The day care program can also demonstrate good nutrition by providing other interesting foods that do not contribute to and some which help to combat caries formation.

The current gap between knowledge and practice is demonstrated by a 1971 survey of 99 preschool personnel conducted by the Preventive Practices Branch of the Division of Dental Health, U.S. Public Health Service. This survey found that while 75% of the preschool teachers said they would tell children how to brush their teeth, only 8% would include in their classroom instruction on-the-spot toothbrushing practice.[117]

Preliminary pre-training data from 143 Southeastern Pennsylvania day care programs evaluated by the Health Advocacy Training Project reveals that almost 35% of the programs surveyed never have children brush their teeth in day care. In conjunction with inadequate dental hygiene practices, day care programs may further caries development through undesirable feeding practices as illustrated by the following information from the previously mentioned survey of eleven Texas day care centers:

> "The most used solid fruit was canned peaches. More cookies and cakes were served than other forms of dessert. The use of dark green or deep yellow vegetables and citrus fruits other than orange juice was low." [118]

Based on the data available, it seems obvious that (1) children of all ages, including those in day care are at risk of dental disease; and (2) federally funded day care programs need to recognize the importance of and implement the following dental health practices:

(1) Bottle feeding of infants outside of beds;
(2) Daily toothbrushing;
(3) Reduction of sugar and carbohydrates in the meals served to children; and
(4) Assurance that enamel hardening doses of fluoride are received by day care children via community fluoridated drinking water, or by fluoride drops or tablets given by parents or by the program where drinking water fluoridation is not performed.

[117] Erwin Linn, "Teaching Preventive Dental Health", Children Today, Sept-Oct., 1972.

Lead Absorption

Lead absorption in children is primarily caused by eating flakes of lead-based paint and/or by eating dirt containing lead. Children who live in housing built before 1940 are considered to be at risk, since lead-based paint is much more prevalent in older housing. The United States Surgeon General has estimated that 400,000 children nationally are affected by lead absorption, with 85% of these in the one to three year old group. Of affected children, 300 to 400 children die annually from lead poisoning and 6,000 more suffer irreversible brain damage.[119]

Children in day care, particularly if they come from older housing may be developing lead poisoning from lead absorption at home. But if the day care facility has lead-based paint, the children in that facility would also be exposed to lead absorption in day care. To this end, we note that a 1975 statewide survey of day care centers in Pennsylvania, sponsored by the Pennsylvania Department of Environmental Resources, found that 57% of the centers had evidence of lead-based paint on interior surfaces.[120] Since even one or two lead laden chips of plaster falling into a lunch may provide a significant lead burden for a child, any lead in the day care environment must be avoided.

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[119] Frederick Green, M.D., "Getting Ready for National Health Insurance: Short-changing Children", Statement before the Subcommittee on Oversight and Investigations of the U.S. House Committee on Interstate and Foreign Commerce, October 7, 1975, quoted in Doctors and Dollars Are Not Enough, a report by the Children's Defense Fund of the Washington Research Project, 1976.

[120] "Survey to Determine the Presence and Extent of Lead in the Environment of Pennsylvania's Day Care Centers", Sponsored by Department of Environmental Resources, Commonwealth of Pennsylvania, 1975.

There are other quiet conditions which also threaten the healthy developme of children: developmental disabilities, speech and hearing problems, vision difficulties, sickle cell trait. It is not possible within the scope of this paper to provide indepth analysis of the prevalence of all these risks in child populations and their consequences for development. To do that in a detailed manner would require a textbook—which cannot be produced in four months of our part-time work.

However, we are able to provide in the following pages, a Guide to Routine Health Supervision (Tick Sheet and Key) developed in the Health Advocacy Training Project for use by day care personnel.

The Health Advocacy Training Project (HAT) is a Southeastern Pennsylvania-based project funded by OCD and directed by Susan S. Aronson, M.D. in which an intervention of training and consultative evaluation is being tested for its impact on the health component (e.g., staff behavior related to health and safety practices) on 153 day care sites.[121]

The following guide summarizes the recommended periodicity for tests which should be routinely used to detect quiet conditions not detailed previously. The nature of each test, some of the current thinking about the conditions detected by the test and normal results for each test is detailed in the Tick Sheet Key found in Appendix E.

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[121]The Health Advocacy Training Project is a demonstration project supported by the Office of Child Development, HEW, Washington, D.C., Grant No. OCD-CB-491, 1973-1976.

THE HEALTH ADVOCACY TRAINING PROJECT 3,4

THE MEDICAL COLLEGE OF PENNSYLVANIA
3300 Henry Avenue
Philadelphia, Pa. 19129

A GUIDE TO ROUTINE HEALTH SUPERVISION

(Tick Sheet)

PROGRAM NAME

PROGRAM ADDRESS

	AGE: MONTHS								YEARS				
HEALTH ASSESSMENT PROCEDURE	2-6 wks.	2-4	5-7	9-12	13-16	17-20	22-25	27-30	3-4	5-6	8-9	11-12	13-15
HISTORY / PHYSICAL EXAM	■	■	■	■	■	■	■	■	■	■	■	■	■
SCREENING: GROWTH ASSESSMENT	■	■	■	■	■	■	■	■	■	■	■	■	■
SCREENING: VISION	■ ••	■ ••	■ ••						■ or				
SCREENING: SPEECH AND HEARING			■ ••		■ ••				■ or				
SCREENING: URINALYSIS (ALL) Urine culture (Girls)								■	■	■	■	■	■
SCREENING: TUBERCULIN				■			p.r.n.		p.r.n.		p.r.n.		p.r.n.
SCREENING: BLOOD: PKU	■												
SCREENING: BLOOD: HEMOGLOBIN / HEMATOCRIT				■					■ or	■		■	
SCREENING: BLOOD: SICKLE, GUPO			■ o										■ o
SCREENING: BLOOD: LEAD						■ o		■ p.r.n.	■				
SCREENING: DEVELOPMENTAL or SCHOOL PERFORMANCE	■	■	■	■	■	■	■	■	■	■	■	■	■
DISCUSSION and COUNSELING	■	■	■	■	■	■	■	■	■	■	■	■	■
DENTAL ASSESSMENT	■ ••	■ ••	■ ••	■ ••	■ ••	■ ••	■ ••	■ ••	■	■	■	■	■
IMMUNIZATION: DPT	■	■	■			■			■				
IMMUNIZATION: POLIO	■	■	■			■			■				
IMMUNIZATION: MEASLES (Rubeola) / GERMAN MEASLES (Rubella)			■							■ o			
IMMUNIZATION: MUMPS										■ o			
IMMUNIZATION: Td												■	
E.P.S.D.T. Screen #	1	2	3	4		5	6	7	8	9	10	11	

SYMBOLS

■ To be performed

o Where appropriate

p.r.n. As indicated by likelihood of exposure

•• Inspection, Observation & Report

or Indicates that the procedure may be done at one of the visits crossed by the symbol.

NOTES: 1. See attached Tick Sheet Key and References

2. If a child first comes under care at any point in the schedule, or if any items were not performed at the suggested ag the child should receive all the services needed to be brought up to date as soon as possible.

3. The Tick Sheet may be copied with source reference retained.

10/75 4. The Health Advocacy Training Project was funded by HEW Grant OCD CB-181

The Quiet Conditions and Day Care

Clearly the data presented in the previous section strongly suggest the need for (1) day care program linkages with health resources so that the quiet conditions can be detected early; (2) routine evaluation of day care facilities and practices to make sure the program iteself is not contributing to the development of health-threatening conditions. There are a variety of ways in which day care programs can minimize the risks of the quiet conditions. These approaches are discussed in the next section of this paper.

SECTION III

WHAT PROGRAM CHARACTERISTICS WOULD HELP PREVENT OR MINIMIZE RISKS?

Our understanding of the characteristics of day care which would help prevent or minimize risks derive primarily from our experience in day care and the research of the Health Advocacy Training Project.

We believe that controlling for risks of accidental injury, infection and undetected "quiet conditions" is related to both internal (relative to the individual program itself) and external (relative to the program's relationship with outside resources) characteristics of day care programs.

Internal Characteristics

Some of the internal characteristics relevant to health and safety risks are:

1. Staff-Child Ratio--We feel that the point raised by Mr. Irwin Benjamin, one of the chief developers of the Child Life Safety Code (CLSC) at our April 27 work session is particularly germane here. Mr. Benjamin explained that the CLSC was evolved on the basis of a perceived interdependence between staff-child ratios and structural characteristics. Thus, the staff-child ratios in the CLSC were developed on the basis of what would be necessary to protect children from risk of death or injury by fire, given various types of construction and structural characteristics of the facilities. If the staff-child ratios change, then different, more stringent requirements for structural characteristics would be necessary.

We believe it would be of value to explore the relationship between staff-child ratios and the problem of sanitation, particularly in day care. What ratio would be necessary to insure that at least the sanitary routines demonstrated to be necessary to prevent disease transmission in situations where groups of infants are in care--routines related to handwashing, washing of diaper-changing

and other critical surfaces, washing or disposal of soiled diapers? We have been looking for data that would demonstrate that in children under two, for example, cared for in a group setting, x number of adults have been found necessary to maintain a, b, c routines in z number of children. We know that the American Academy of Pediatrics recommendations for hospital newborn nursing staff-child ratio is 1:6-8 infants. Admittedly, this ratio is designed to assure only physical care since waking-feeding routines for well babies are expected to be provided by the infants' mothers (often at rigidly prescribed intervals). Until further information is gathered about suitable ratios in the nuturant day care setting, the 1:6 ratio can be used as an outside limit for infant care based on avoidance of sanitation hazards alone.

Mixed age populations deserve special consideration because simple application of the ratios which are appropriate for the youngest child served unreasonably descriminates against family-style caregiving arrangements. Although we are unaware of any systematic study of staff-child ratios in mixed age settings, we are aware of at least one center where this type of grouping is practiced and the wealth of family day care home experiences where mixed age grouping is common.

At The Learning Center of the Medical College of Pennsylvania, 10 children ranging in age from newborn to four years of age are grouped under the care of two adults. Each adult is primarily responsible for one infant, one toddler and three preschool age children. Although caregiving responsibility for all 10 children is commonly shared between the two adults, the assignment of one child to one adult assures each child of adult accountability for both immediate and longitudinal observation and attention. This observational accountability on a 1:1 basis appears to be essential to the detection of subtle changes in

patterns of behavior or health status. These observations are the basis for effective (screening) early detection and correction of health problems.

Another interesting area to explore would be the relationship between different staff-child ratios and accident prevention or minimization, particularly with regard to falls, the most prevalent childhood injury. Research in this area is being done by the Ft. Valley State College in Georgia, but results are not available at this writing.

2. Health Education/Knowledge Base of Children, Staff and Parents—In some areas, the interaction between the knowledge base of these three different groups would seem to promote or prevent risks more clearly than in other areas—infectious disease transmission is one example. In this case, what the parent knows and what the child knows influences what the child brings by way of infection into the day care setting. Likewise, what the staff knows and what the child knows influences what the child brings out of the day care setting back into the family—and so on in cyclical fashion. A similar cycle exists for staff awareness of the significance of their own health problems and of how children's health problems may relate to their own. Modeling of good health practices remains the best method of health education. If parents smoke, eat inappropriately and take risks in the presence of children, for example, research has shown that the promotion of similar behavior by the children can be expected—despite verbal messages about sensible practices.[1] A similar effect of day care worker behavior on child behavior might be expected.

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[1]John Bruhn, et. al., "Toward A Theory and Classification of the Wellness Process" unpublished paper, School of Medicine, U. of Texas Medical Branch, Galveston Texas.

3. Structural Characteristics of Programs— e.g., the physical plant inside and outside, presence of lead and other toxic substances, fire resistiveness, of structure, movable physical structures within the day care setting, e.g., toys, playground equipment. The relevant concerns are the characteristics of the facility itself and of objects used inside and outside the facility as part of the program. Under this definition, motor vehicles used in transportation and the design of street crossing areas immediately adjacent to a day care center are also examples of structural characteristics which influence health and safety.

4. Staff Behavior— Children are safe only when knowledgeable care-givers routinely develop and put into action policies and plans that minimize the risks to which children are vulnerable.

Whether they relate to knowledge and health education, physical structure or staff behavior, the internal program characteristics which help prevent or minimize risks to health and safety are numerous. A listing of the program characteristics measured during the Health Advocacy Training Project, together with the risks they would control, is provided on the following pages.

Risks	Day Care Program Characteristics Measured By The HAT Project
Motor vehicle and Pedestrian Accidents	Provide restraints for each child. Use restraints provided.
Fires, Burns	Plans for emergency evacuation. Emergency plans approved by an evacuation expert. Plans for evacuation posted (of those with plans). Had a disaster or fire drill within one month. Had a disaster or fire drill within three months. Keep a log of drills. Heating elements insulated or installed to prevent burns to children. Fabrics used are fire resistive. Electrical outlets fitted with devices to prevent tampering. Hot water temperature does not exceed 120° (scalding) where children use it. Exit doors are equipped with panic hardware.
Suffocation, Poison and Ingestion	Walls checked for lead based paint. Plastic bags and small objects are out of childrens reach. Toxic products are out of reach.
Falls	Outside stairs have safety gates or landings. Outside hazardous steps have ramps. Inside stairs have right hand descending railing. Openable windows are screened. Equipment is sturdy, without hazards (includes playground equipment).
Drowning, General Injury Prevention, Emergency Preparedness and Management of Injury	Perform environmental and safety checks. At least one staff member trained in first aid. First aid equipment is available in at least one area of the building. First aid equipment is available in each child care area. Policies include screening staff for any child abuse record or history.

(Cont'd)

Risk	Day Care Program Characteristic
Drowning, General Injury Prevention, Emergency Preparedness and Management of Injury, cont'd.	Policies include procedure for accident and injury management. Policies include safety precautions. Arrangements for transport of a sick or injured child to emergency facility. Emergency transport includes presence of an adult other than a driver. Provision is made for alternative coverage of child supervision when adult must leave for an emergency. Arrangements for emergency care are adequate (e.g., facility or service named provides emergency care).
Prevent, Control and Manage Infectious Disease	Programs provide or arrange for children to have immunizations: DPT/DT, oral polio, rubella. Policy for daily health check. Policy for managing illness. Policy for routine health care including immunizations. Policy regarding child's attendance during illness. All employees screened for TB. Physician's health statement for caregivers required. Staff health statement received annually. Sick leave policy for caregivers and food service staff. Regular substitutes available. Handwashing consistently performed. Staff health habits appraised as a part of their evaluation. Trash stored covered. Rooms adequately ventilated. Temperature of rooms is between 65° and 78°. Potty chairs are not used. Laundry, food and toilet areas are separate. Handwashing facilities are in or adjacent to child care areas. Have a specific place for diaper or underclothes changing if it is done. Handwashing facility is in close proximity to underclothes/diaper area. Openable windows and doors are screened if used for ventilation.

Risk	Day Care Program Characteristics
Quiet Conditions	Programs reporting have children with or suspected to have the problem have had the following conditions diagnosed: visual problems; hearing problems; emotional disturbances; learning problems. Screening tests are arranged for, provided or checked on when done, to determine whether adequate for: growth assessment; vision; hearing; anemia; lead; G6PD; sickle cell; urine; developmental. Medical check-up performed. Evaluation of a suspected medical problem performed. Follow-up treatment of a health problem. Dental check-up performed. Maintenance of children's health records. Adequate content of children's health records. Transfer medical records to school at least some of the time. Review health records at least once a year. Caregivers express concerns about child's health to health provider in writing. Children brush their teeth. Infants are held for feeding. Bottle-propping is prohibited. Parents are consulted to coordinate food planning in home and day care.
Health Awareness Issues Applicable to More Than One Risk Factor	Member of staff meet with teachers to plan health instruction. Frequency of health instruction planning is routinely established, e.g., at least monthly, quarterly, or annually. Health procedures are discussed with children. Public service groups are involved in instruction of staff and/or children, e.g., police, fire, public health. Medical, dental and nutrition information is included at parent meetings. Health professionals from the community are involved in providing health instruction to children. Inservice meetings are used to discuss health matters.

External Characteristics

Precisely because the internal program characteristics that minimize health and safety risks are so numerous, it is critical that a day care program's relationship with outside resources contribute towards improving program maintenance of needed staff-child ratios, heightened awareness of health and safety issues, safe physical structures and risk-preventing staff behavior. Those external characteristics currently operating in the day care delivery system are: (1) linkages with health resources; (2) training; (3) regulation; and (4) funding.

1. Day Care Program Linkages with Health Resources—The definition of a relationship between the day care program health activities, the family, and the health service resources in the community is important to all involved. The range of possible health service relationships is analagous to the continuum described for school health's role by Frederick North.[2] At one extreme the day care program does nothing about provision of direct health services, leaving the whole job to parents and an effective health service delivery system. At the other end of the continuum where health services in the community are grossly deficient, the day care program may need to provide comprehensive health services to the children it serves. The points in between these two extremes are intermediate roles which could be played by the day care program as it advocates and facilitates to accomplish full service goals for children and their families. As a minimum, each day care program must determine the need

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[2]Frederick A. North, M.D. "Defining Alternative Roles for a School Health Service", a working paper, June, 1976.

for service for its clientele, define and implement its role through health education and facilitate services to the families, the staff and the community health resources. Day care programs should be expected to justify funding requests on the basis of evidence that the day care program is providing a residual service where locally available health services and parents cannot meet the need. The residual service role for day care is critical to avoid underutilization of continuous comprehensive health service resources. Day care should not promote dependency on institutions to which the family has limited access in terms of 24 hour a day, seven day a week, life-time health service needs. On the other hand, children grouped in care arrangements offer a convenient efficient organization for health professionals to provide some kinds of health services, a unique environment for behavioral education on life-time health practices, and a natural linkage point with on-going assessment of the child's functional status for early detection of deviations compared with a set of peers.

To perform even the minimal role, day care programs must have adequate management tools (e.g., health records) so that supportive efforts can be concentrated on those who need them. The need for this approach is documented by a recent report of the cost-effectiveness of a Denver school health immunization program. [3] The study compared the results of a selective target, direct service approach with a health education program for students and parents, with and without school supplied immunization services. In terms of personnel cost and results achieved, the identification of those who needed immunizations from school records, coupled with provision of the service to those so identified b the school was most cost-effective.

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[3] T. Vernon, et. al., "An Evaluation of Three Techniques for Improving Immunization Levels in Elementary Schools", AJPH, May, 1976, 66:457.

Added to the importance of individual (child and adult) health records in identifying the need for residual service is the apparent predictive value that having good individual medical records has for the rest of the health aspects of the program. Preliminary analysis of the Health Advocacy Training Project data reveals that high medical record content compliance scores correlates significantly with high compliance scores in most of the other health component areas assessed.

Included in the day care program's linkages with health services is a vital relationship with mental health services. This is important not only for the early detection of mental illness, learning problems or emotional problems in young children, but also as a support to staff. We agree with Dr. David Friedman who commented on our Interim Report that "effective mental health consultation for the staff would significantly improve the health and safety of the children...."

2. Training—There is very little to report in this section about current training programs in health and safety for day care providers. Despite our scanning of hundreds of articles and hundreds of pages of various bibliographies for the purpose of researching this report, we find no evidence of comprehensive courses focusing systematically on health, safety and nutrition issues in day care other than:

(1) The Health Advocacy Training Project at the Medical College of Pennsylvania (described on page 95).

(2) A course developed by Bank Street Day Care Consultation Service and the Martin Luther King Health Center.[4]

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[4]Described in VOICE FOR CHILDREN, June, 1974 (VOICE FOR CHILDREN is a periodical published by the Day Care and Child Development Council, 1012 14th St. N.W., Wash., D.C., 20005). Course materials may be available from Mr. Peter Sauer, Bank Street Day Care Consultation Service, 610 W. 112th St. New York, N.Y. 10025 or Ms. Gladys Valdivieso, Martin Luther King, Jr. Health Center, 400 E. 169th St. Bronx, N.Y.

(3) A course developed for family day care at Quinsigamond Community College in Worcester, Massachusetts.[5]

(4) A course developed at Mt. Hood College Center in Portland, Oregon.[6]

Finally, an interdisciplinary graduate program sponsored by the School of Education, the School of Public Health and the School of Social Welfare at the University of Berkeley is structured around interdisciplinary seminars that reflect a strong concern for child health.[7]

Although it is possible that some day care programs offer inservice training in child health, safety and nutrition, it is still significant that so few colleges, universities and medical schools or schools of public health have developed regular training courses. In addition, there is at present no textbook of health, safety and nutrition for day care which might be used for on-the-job training of child care workers or students in preparation for caregiver roles.[8]

All of this lack of attention to insuring adequate knowledge of child health, safety and nutrition in day care providers may be related to the prevalence of health and safety hazards described by the various reports cited in the following sections. The effectiveness of the Health Advocacy Training Project offers an informative contrast—and a good rationale for increased emphasis on health and safety training.

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[5] VOICE FOR CHILDREN, June-July, 1975, p. 11. Course materials may be available from Ms. Gretchen Thayer or Ms. Amy Squibb, Quinsigamond Community College West Boylston St., Worcester, Mass.

[6] VOICE FOR CHILDREN, August, 1975, p. 12. Descriptive materials may be available from Bob Dematteiss, Mt. Hood College Center at Maywood Park, 102nd at N.E. Prescott, Portland, Oregon, 97220.

[7] VOICE FOR CHILDREN, August, 1975, p. 12. Again, it might be possible to obtain materials from Dr. Millie Almy (School of Education) or Dr. Helen Wallace (School of Public Health) at the Un. of California, Berkeley, 94720.

[8] Health Services, an OCD manual prepared by Dr. Fred North [illegible]

(6) applied according to standard interpretations recorded in a manual which would be accessible to all;

(7) developed with provider grievance and appeal mechanisms as well as parent complaint procedures clearly described and ready to respond quickly.

The application of these criteria to the development and application of regulations implies a standard-setting process which involves representatives of interested parties and includes public hearings, the development of training and technical assistance for monitors, providers and parents and the production of materials designed to increase public and professional awareness of the nature, goals and methods of regulation.

Regulation is deeply and inherently a political process. Of course, those who spend their days in researching areas such as risks to health and safety as well as those who have experienced the outcomes of risk-exposure (e.g., medical personnel, fire fighters, etc.) have a very important role to play: the presentation of their observations and the argument for regulation that minimizes risk. But in the long run, the actual process of day care regulation is an expression of shared societal values about what distinguishes acceptable from not-acceptable risk to children and their families. (See discussion of acceptable risk in Section I of this paper.)

4. Funding—In federal regulation, the setting of requirements without the provision of the funding necessary to comply with this requirements is an absurdity. The subsequent penalizations of states and of providers who are unable to comply because of constricted funding constitutes "cruel and unusual punishment".

At least three elements should characterize the federal system of funding day care:

(1) sufficient levels of funding—sufficient enough to insure that standards can be met and monitored;

(2) a federal requirement of the states that rate-setting for the purchase of day care be done openly and on the basis of what it costs programs to meet federal fiscal requirements;

(3) a special source of funds for start-up and facility renovation costs—a "Hill-Burton Act for Day Care".[9]

We consider it significant that American consumers of child care—parents—agree with our analysis. The following table represents the results from some questions asked about standards in the 1975 national survey of child care consumers carried out by UNCO, Inc.[10] The data were collected from a stratified national probability sample of telephone households with children 13 years old or younger. A total of 4,609 consumers were interviewed at home and asked to respond to a number of questions about staff-child ratio, special health, dental and psychological services. The sample of persons asked to respond to these questions were parents of children under 14 using some form of child care more than once a week. The respondants represented 65% of all households contacted. Rural, urban and socioeconomic representation were carefully adjusted to obtain a statistically valid cross-section of national opinion. Survey techniques included appropriate precautions to prevent bias from interview refusals. Only 0.8% of day care center and 13.3% of family day care home users felt that no standards should be set. The percent of day care center and nursery school users

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[9] The Hill-Burton program is the forerunner of other programs under which the federal government assists in financing the construction of facilities, but not their operation. Since 1948, this program provided grants to states to assist in building non-profit hospitals, nursing homes and health centers.

[10] T. Rodes and J. Moore, National Child Care Consumer Study: 1975, Vol. I Basic Tabulations, unpublished report to the Office of Child Development, HEW.

who concur with application of specific standards are listed in the table below with the percent of families interviewed who concur with each statement.

TABLE VIII

Standard	% of Center Users
1. Fire and building safety	93.8
2. Cleanliness and sanitation of facilities	94.1
3. Health condition of staff and children	88.9
4. Training and qualification of staff	88.3
5. Food and nutrition	87.7
6. Number of children per responsible adult	85.8
7. Space per child and physical surroundings and equipment	81.3
8. Counseling and referral services for family and child problems	69.1

For family day care, a similar listing shows fewer but still substantial numbers of consumers who favor specific standards as shown in TABLE IX.

TABLE IX

Standard	% of Center Users
1. Cleanliness and sanitation of facilities	78.5
2. Fire and building safety	67.4
3. Food and nutrition	63.3
4. Number of children per responsible adult	62.2
5. Health condition of staff and children	59.2
6. Space per child and physical surroundings and equipment	46.7
7. Training and qualification of staff	44.1
8. Program content and activities	36.4
9. Counseling and referral services for family and child problems	25.6

Other questions in the UNCO study addressed user opinions regarding whether specific services should be available from the day care program, whether they as consumers desiring the availability of the service would be willing to pay extra and whether the specific service was presently available. These data are summarized in TABLE X.

TABLE X

Service	% Who Said The Service Should Be Available	% Willing To Pay Extra Of Those Who Desire The Availability Of The Service	% To Whom The Servic Is Present Availabl
Planned nutritional meals and snacks	96.2	69.5	44.3
Immunizations and medical check-ups	6[illegible]	80.0	6.2
Dental check-ups	9[illegible]	79.0	4.8

Based on the information just presented, we conclude that American parents are committed supporters of standards that minimize risks to health and safety of children in day care, especially in day care centers. Furthermore, American parents show a remarkable degree of support for the staff-child ratios in the current Federal Interagency Day Care Requirements.

Finally, the majority of American parents believe that "special services" such as immunizations and check-ups, planned nutritional meals, psychological services, etc. should be available through a day care center, nursery school, or licensed family day care home—and many were willing to pay extra for those services.

SECTION IV

WHAT DO WE KNOW ABOUT CURRENT HEALTH AND SAFETY PRACTICES IN DAY CARE?

Although difficult to locate and assemble, there is some valuable information about current health and safety practices in day care. We have organized this material as it relates to the previously described internal and external characteristics of day care.

Our major sources of information for internal characteristics related to health and safety in day care are:

(1) data collected by the Health Advocacy Training Project;

(2) a report on task ratings by day care experts and personnel published as part of a Texas Day Care Study;

(3) a 1972 UNCO Region X Study of federally funded day care settings;

(4) an HEW audit of federally-funded day care in nine states;

(5) a 1975 Environmental Health Evaluation of day care centers in Washington, D.C.

Our major sources of information for external characteristics related to health and safety in day care focus primarily on the adequacy of state licensing regulations and the monitoring process:

(1) a 1971 HEW survey of state and local day care licensing requirements;

(2) a 1972 CEMREL report comparing state and local standards for day care;

(3) a 1975 OCD investigation comparing the FIDCR with state licensing regulations;

(4) a 1975-76 SRS Day Care Management Study.

In addition, although no systematic evaluation of day care program linkages with health resources has been done, we received several important papers describing such linkages from Interim Report reviewers. We have included some excerpts from these papers in this section.

Internal Characteristics

Do present health and safety practices within day care programs reduce the risks to health and safety described in previous sections of this paper? We believe the available information indicates substantial effort and interest on the part of providers to reduce risk. However, those efforts do not accomp the goal of controlling for many significant risks, particularly the risks of accidental injury, mismanagement of emergency situations and infection.

The Health Advocacy Training Project and The Texas Day Care Study

There is very little systematically collected information on health and sa practices in day care. HAT collected data on the frequency of practices of struc features of 153 day care sites with the aid of an instrument called the Health S Compliance Checklist (HSCC). Comparable pre-training data was only collected for of the sites. The HSCC is a tool which has been developed and tested by the HAT Project as an instrument that collects data relevant to health and safety practic in day care. Data on health component compliance for each site was collected at twice, with one year between the two evaluations. At this writing, day care prog monitors from the Pennsylvania Department of Public Welfare are helping to develo test a revised version of this instrument to check Title XX day care compliance with current FIDCR and State requirements.

A review of preliminary selected frequency data from the pretraining assessments done by HAT reveals that there are some areas of high compliance with risk reducing practices while other areas show low compliance. The HAT data can be compared with a recent report of a study of ratings of tasks performed by day care personnel in Texas. [1] The task analysis was performed using day care teachers, administrators and child development experts who ranked each task

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[1] Michael Zaccaria, et. al., Texas Day Care Study, Final Report, Occupational Analysis of Day Care Personnel, College of Multidisciplinary Studies, Division of Education, U. of Texas at San Antonio, February, 1976.

according to the time s/he spent on the task, consequances of not performing the task, difficulty of performing the task and the training priority for performing the task. Using those items which have been identified in this paper as associated with a significant degree of risk, we have constructed a table which relates high risks to HAT data on compliance to the data from the Texas study and to HAT priorities for training.

TABLE XI

RISK RISK ITEM NO THIS REPORT	PRELIMINARY NAT PRETRAINING DATA % OF 163 PROGRAMS COMPLYING		TEXAS STUDY: RELATED TASK FROM TEXAS OCCUPATIONAL ANALYSIS		% OF GROUP I TIME SPENT BY ANY GROUP ON TASK	CONSEQUENCES OF INADEQUATE PERFORMANCE OF TASK 1 = Negligible 10 = Disastrous		DIFFICULTY OF LEARNING TASK 1 = Extremely Low 10 = Extremely High	TRAINING PRIORITY 1 = No Value 9 = Absolutely Necessary	NAT TRAINI PRIORI
	Item Description	%	Task Description	Task, Area & Number	%	9 = In top 20%		9 = In top 20%	9 = In top 20%	9 = All 8 = Ma 7 = In
						Experts	Directors			
Motor vehicle and pedestrian accidents	Provide restraints for each child	71.4	Drive children to or from center	B5	.81	3.3	4.2	4.2	3.6	H
	Has restraints provided		Arrange for transportation	B1	1.81	3.2	4.3	4.1	3.4	
	Always	78.7								
	Sometimes	12.1	Plan field trips for children	A9	1.29	3.8	3.8	4.6	4.2	
	Never	12.1								
	Unknown	7.8	Manage children on field trips	F8	.95	4.3	4.6	3.8	4.3	
Fires, burns	Plans for emergency evacuation	87.3	Develop plans or procedures for emergency situations	A3	2.22	6.9*	7.3*	5.2	6.4*	H
	Emergency plans approved by an evacuation expert	98.6								
	Plans for evacuation passed of those with plans	22.3								
	Had a discover or fire drill within 1 month	39.9	Schedule building maintenance	C3	2.82	5.1	4.9	4.7	4.6	
	Had a discover or fire drill within 3 months(if none in 1 month)	14.1								
	Keep a log book of drills	43.4	Conduct fire drills	B4	1.82	6.8*	6.4*	4.4	5.9*	
	Can show log book	38.7								
	Heating elements insulated or installed to prevent burns to children	78.2	Regulate heating cooling or ventilation	B13	1.93	3.4	3.8	3.4	3.8	
	Fabrics used fire resistive	21.9								
	Electrical outlets fitted with devices to prevent tampering	36.6	Carry out emergency measures in case of illnesses, accidents or fire	B17	1.18	7.1*	7.9*	5.3	6.7*	
	Has water temperature thing and around 120° (scalding) whose children use it	44.8	Explain safety rules to children	B6	1.42	6.1*	6.6*	4.8	5.7	
	Exit doors equipped with public hardware	86.9	Direct children during fire drills	F2	1.13	6.4*	7.2*	4.8	6.0*	
Suffocation and ingestion	Walls checked for lead based paint	72.3	Remove hazardous objects from children's reach or presence	B13	1.68	7.2	7.3	3.7	5.9	H
	Plastic bags and small objects out of reach	91.3								
	Toxic products out of reach	93.7								

ITEM BEING ITEM IN THIS REPORT	PRELIMINARY NAT PRETRAINING DATA I OF 143 PROGRAM CHARACTER		TEXAS STUDY RELATED TASK FROM TEXAS OCCUPATIONAL ANALYSIS		HIGHEST AVERAGE I TIME SPENT BY ANY GROUP ON TASK	CONSEQUENCES OF INADEQUATE PERFORMANCE OF TASK 1 = Negligible 10 = Disastrous		DIFFICULTY OF LEARNING TASK 1 = Extremely Low 10 = Extremely High	TRAINING PRIORITY 1 = No Value 9 = Absolutely Necessary	NAT TRAINING PRIORITY H = High M = Med L = Low
	Item Description	I	Task Description	Task, Area & Number	I	* = In top 20% Trainers	* = In top 20% Directors	* = In top 20%	* = In top 20%	
Safety	Outside stairs have safety gates on landings	13.6	Explain safety rules to children	24	S E E A B O V E					H
	Outside handrails steps have ramps	62.9	Develop rules to insure health and safety of children	44	3.49	7.8*	7.3*	3.2	6.9*	
	Inside stairs have right hand descending handrail	77.1								
	Windows and doors used for ventilation are screened	47.2	Clean or maintain toys or indoor equipment	59	1.20	3.4	3.3	2.1	4.8	
	Equipment sturdy, without hazards (includes playground equipment)	96.2								
Drowning	-	-	Schedule swimming instruction	69	.48	3.4	4.1	4.4	3.1	H
General Injury Prevention, Emergency Procedures and Management of Injury	Perform environmental safety checks	44.2	Explain safety rules to children	24	S E E A B O V E					
	At least 1 staff member trained in first aid	66.3	Develop rules to insure health and safety of children	44	S E E A B O V E					H
	First aid equipment available in at least one area of building	97.4	Develop plans of procedures for emergency situations	43	S E E A B O V E					
	First aid equipment available in each child care area	48.9	Schedule building maintenance	65	S E E A B O V E					
			Administer first aid	82	2.33	6.7*	7.2*	5.3	6.9*	
	Policies include screening staff for child care abuse record or history	37.3	Make repairs on equipment, toys or furniture	317	3.1	3.3	3.1	4.2	4.9	
	Policies include procedure for accident and injury management	79.4	Remove hazardous objects from children's reach or presence	313	S E E A B O V E					
	Policies include safety precautions	73.1	Carry out emergency measures in case of illness, accident or fire	317	S E E A B O V E					
	Arrangements for transport of a sick or injured child to emergency facility	83.0								
	Emergency transport includes presence of an adult other than a driver	66.2								
	Provision is made for alternative provision of child supervision when adult must leave for an emergency	73.3								
	Arrangements for emergency care are adequate (e.g. facility or service named provides emergency care)	60.8								

SIGNS BASE ITEM IS TEXT REPORT	PRELIMINARY NAT PRETRAINING DATA % OF 143 PROGRAMS COMPLYING		TEXAS STUDY RELATED TASK FROM TEXAS OCCUPATIONAL ANALYSIS		WEIGHTED AVERAGE % TIME SPENT BY ANY GROUP ON TASK	CONSEQUENCES OF INADEQUATE PERFORMANCE OF TASK 1 = Negligible 10 = Disastrous		DIFFICULTY OF LEARNING TASK 1 = Extremely Low 10 = Extremely High	TRAINING PRIORITY 1 = No Value 9 = Absolutely Necessary	NAT TRAINING PRIORITY H = High M = Med. L = Low
	Item Description	%	Task Description	Task, Area & Number	%	8 = In top 20% Remarks	Directors	8 = In top 20%	8 = In top 20%	
Prevent, Control and Manage Infectious Disease	% of programs providing or arranging for children to have immunizations		Toilet train children	T29	5.6	6.3	5.8	6.7	5.6	
	DPT/DT	39.2	Carry out personnel policies	C1	2.77	5.1	5.7	5.3	6.09	
	Oral Polio	36.3								
	Rubeola	37.2	Maintain staff personnel records	C5	1.50	4.7	4.8	5.4	5.3	
	Rubella	37.8								
	Policy for daily health check	30.8								
	Policy for managing sudden illness	90.4	Evaluate staff and determine training requirements	C16	3.84	6.39	6.09	6.09	6.39	
	Policy for routine health care including immunizations	71.2								
			Clean tables	T3	1.25	5.0	5.6	5.0	5.2	
	Policy regarding child's attendance during illness always given to parents.	79.3	Set tables or serve food	T8	1.13	4.1	5.0	5.0	5.3	
	All employees screened for TB	83.6	Clean playing areas	T6	1.31	5.4	5.3	5.7	6.1	
	Physician's health statement for caregivers required	88.1	Clean and maintain kitchen equipment	T7	.70	5.09	5.6	5.4	6.0	
	Staff health statement reviewed annually	49.2	Clean kitchen or dining area	T8	.98	5.0	5.7	5.5	6.6	
	Sick leave policy for caregivers and food service staff	93.0	Clean or maintain toys or indoor equipment	T9	1.28	5.4	5.3	5.1	6.0	
	Regular substitutes available	79.3	Clean toilets, lavatory and bathroom areas	T10	1.12	6.09	5.9	5.8	6.7	
	Handwashing, consistently performed	72.2	Dispose of trash or garbage	T11	.73	5.0	5.7	5.2	5.5	
	Staff health habits appraised as a part of evaluation	41.3	Bathe infants and children	T16	.43	5.3	6.2	6.2	5.6	
	Trash stored covered	94.3	Dress infants or young children	T13	1.73	6.7	6.6	5.7	5.5	H
	Rooms adequately ventilated	98.7	Guide children to do things for themselves	T21	2.24	5.7	5.5	5.6	5.09	
	Temperature between 65° and 75°	83.3	Toilet train children	T29	SEE A2 OVE					
	Potty chairs not used	83.7	Manage children who wet or soil their pants	T22	2.43	6.7	6.6	5.6	5.6	
	Laundry, food and toilet areas separate	91.9	Manage bathroom procedures	T24	1.93	6.6	6.5	6.2	6.5	
	Handwashing facilities in or adjacent to child care area	89.6	Manage children in snack or meal activities	T19	2.00	6.6	6.3	6.3	6.6	
	Have a specific place for diaper or underclothes changing if it is done	53.8								
	Of those with changing area, handwashing facility in close proximity to changing area	XXX								
Items wanted to study certain desirable responses	Windows & doors used for ventilation screened (see Table above)									

TASKS RANK ORDERED BY THIS STUDY	PRELIMINARY NAT TRAINING DATA % OF 141 PROGRAMS CONFLICTING	TEXAS STUDY			CONSEQUENCES OF INADEQUATE PERFORMANCE OF TASK 1 = Negligible 10 = Disastrous		DIFFICULTY OF LEARNING TASK 1 = Extremely Low 10 = Extremely High	TRAINING PRIORITY 1 = No Value 9 = Absolutely Necessary	NAT TRAINING PRIORITY
		RELATED TASK FROM TEXAS OCCUPATIONAL ANALYSIS		RANKED AVERAGE % TIME SPENT BY ANY GROUP ON TASK					
	Item Description %	Task Description	Task, Area & Number	%	% = In top 20% Process	Disastrous	% = In top 20%	% = In top 20%	H = High M = Med. L = Low
Select Conditions	Of programs reporting children with, or suspected of having the problem, those who have/d having a diagnosis and a plan of care for the child								
- Visual problems	21.4	Administer prescribed medications	38	1.33	6.39	7.39	4.5	8.3	H
- Hearing problem	13.8								
- Emotional disturbance	22.2								
- Learning problem	36.2								
Screening tests or services arranged for, provided or checked on when done if adequately done		Review and take use of individual health records	204	3.32 / 76.44	3.3	4.9	5.1	8.7	
Growth Assessment	11.0 / 11.7								
Vision	22.2 / 72.7								
Hearing	22.2 / 37.1								
Anemia	14.4 / 73.7								
Lead	21.7 / 77.2								
HGPD	2.3 / 100.0								
Sickle Cell	12.1 / 100.0								
Urine	21.1 / 94.7								
Developmental	23.1 / 73.8								
Medical Check-up	21.7 / 72.5								
Evaluation of suspected medical problem.	28.1 / 94.8								
Follow-up treatment of a health problem	23.1 / 94.7								
Dental Check-	21.7 / 83.9								
Dental Treatment	23.8 / 88.8								
Maintain children's health records	66.3								
Adequacy of content of medical records	37.7								
Transfer medical records to school									
Always	9.9								
Sometimes	19.7								
Review health records at least once a year	69.3								

HIGH RISK ITEM IN THIS REPORT	PRELIMINARY NAT PRETRAINING DATA 2 OF 143 PROGRAMS COMPLETING		TEXAS STUDY: RELATED TASK FROM TEXAS OCCUPATIONAL ANALYSIS		HIGHEST 2 TIME SPENT BY ANY GROUP ON TASK	CONSEQUENCES OF INADEQUATE PERFORMANCE OF TASK 1 = Negligible 10 = Disasterous		DIFFICULTY OF LEARNING TASK 1 = Extremely Low 10 = Extremely High	TRAINING PRIORITY 1 = No Value 9 = Absolutely Necessary	NAT TRAIN PRIO
	Item Description	%	Task Description	Task, Area & Number	%	* = in top 10% Process	* = in top 10% Directions	* = in top 20%	* = in top 20%	N = * =
Water Conditions Items'4.)	Caregivers express concerns about child's health to health provider in writing	32.8								
	Children brush their teeth always	42	Plan menus	A10	1.47	3.9*	3.4	5.7	6.40	
	sometimes	42.3	Inventory food or supplies	B7	2.67	4.4	4.4	4.3	4.3	
	never	22.3								
		35.2								
	Programs in areas without fluoridated water have ensure child receives fluoride supplement	36.1								
	Hold infants for feeding	35.8	Purchase or order food supplies	B13	2.34	3.3	3.4	3.3	3.6	
	Prohibit bottle propping	88.7	Set tables or serve food	B6	1.25	4.1	3.3	3.8	3.3	
	Parents counseled to coordinate food planning in home and day care	74.3	Feed infants or young children	B20	1.33	4.2*	3.9*	4.8	3.3	
	Reasons included:									
	Meat group	29.3								
	Milk group	78.4								
	Cereal group	98.6								
	Fruit & Vegetable group	96.4								
Health Awareness Issues Applicable to More Than One High Factor	Number of staff meet with teachers to plan health instruction	57.7								
	Frequency of health instruction planning of those who plan									
	at least monthly	56.3								
	at least quarterly	13.8								
	at least semi-annual	13.8								
	at least annual	16.1								
	Health procedures discussed with children	36.2								
	Public service groups involved in instruction of staff									
	police	47.2								
	fire	39.9								
	public health	8.3								
	Medical, dental, nutrition information included at parent meeting	38.9								
	Health professionals from community involved in providing health instruction to children	64.5								
	Inservice meetings used to discuss health matters	71.1								

Admittedly in some areas the HAT data and Texas analysis do not coincide precisely with the risk area, but the relationships between the aspects of day care being measure are close enough to derive some insight about the conditions found in Southeastern Pennsylvania day care and the Texas day care personnel's view of the significance of these conditions for job definition and training purposes. From the correlations made, one conclusion is apparent: day care staff currently identify many of the needed practices to assure health and safety as integral to day care roles. What is needed is not to add a large number of new tasks, but to assure that, when performed, the tasks result in decreased risk to the children. For compliance items with which more than 70% of the sites studied complied, it might be argued that this high level of compliance supports the practicality of requiring compliance from all. As shown in TABLE XII, for those items where there is less than 50% compliance, little more than minor capital outlay and staff awareness are needed to reduce many of the risks.

TABLE XII

HAT Items With Which There Was Less Than 50% Compliance	Remedy Needed and Relative Costs
Provide restraints for each child.	One time purchase of child restraint devic for vehicle use. Cost per restraint is le than the cost per child sized classroom ch
Plans for evacuation posted.	Hand-lettered signs suffice.
Fabrics used are fire resistive.	Purchasing awareness. No extra cost.
Electrical outlets fitted with protective devices.	A package of 6 to 8 covers costs less than
Outside stairs have safety gates or landings.	Install inexpensive safety gate which open outward. Firm magnetic or velcro latches be used so that there is a barrier which i case of fire, does not produce entrapment.
Windows and doors used for ventilation are screened	Inexpensive, well fitted portable screens w suffice to close the opening of a window. installation of a nail or right angle brac to prevent opening of the window beyond 6" prevent accidental exit of children through window openings. Doors used for ventilation usually be screened inexpensively.
First aid equipment available in each child care area.	A shoe box into which a roll of gauze band sterile guaze, tape, a bar of soap, tweeze sissors, a plastic glove or bag to hold ic 1 dose of Syrup of IPECAC and a set of fir aid instructions are placed will suffice.
Policies include screening staff for child abuse history and/or record.	Awareness.
Staff health assessment required annually.	Condition of employment which has a cost o $25 to $50 per staff member per year.
Staff health habits appraised as part of on-going staff evaluation.	Awareness.

TABLE XII (Cont'd)

EAT Items With Which There Was Less Than 50% Compliance	Remedy Needed and Relative Costs
Obtaining a diagnosis and care plan for a child suspected of having a health problem.	Advocacy, liaison and coordination activities are required to assure adequacy of care for child and information for the parents and pr Cost is variable dependi[illegible] the number of children with health problems and availabili of health service resource.
Screening tests or services: Growth Anemia Lead Sickle Cell } Where Appropriate Urine Dental health Development Medical check-ups and follow-up for children.	Encourage use of existing health resources a develop residual resources for those who hav none. Provide developmental assessment as an integral part of child care program planni Costs will vary depending on number of children for whom residual services are needed.
Prepare adequate health records.	20 to 40 minutes of staff time/child includi explanation to parents about data from healt provider.
Transfer medical records to school.	10 minutes of staff time/child is usually required.
Caregivers express their concerns about the child's health in writing to the child's health provider (conveyed via the parent).	10 minutes of staff time/child.
Children brush their teeth.	Incorporate into daily routine. Toothbrushes cost .15¢ each wholesale, .50¢ retail.
Programs in areas without fluoridated water make certain child receives fluoride supplement.	Incopronte into intake data and help parents provide supplements.
Consult parents to coordinate program and home feeding.	Parent involvement integral to day care service.
Health instruction by staff and involving community service personnel.	Coordination and arrangement required. Public service groups usually willingly provide instruction free of charge.

The UNCO Region X Study

Further evidence supporting the existence of day care conditions describe by the Health Advocacy Training Project comes from the Northeast section of th country. In 1972, UNCO, Inc. conducted a thorough study of federally funded d care settings in Region X particularly with regard to a comparison of other cu standards and practices with the proposed FIDCR. Some of their findings are summarized in the following charts.[2] The letter "S" at the bottom corner of the boxes denotes "state requires"; "Sp" denotes "partial coverage in state requirements"; the number "68" denotes the 1968 FIDCR. Table XIII (on page 127) shows percentages of day care centers in noncompliance with measures designed to ensure the child's physical safety. Table XIV (on page 128) provides a simil overview for family day care. Screening of the facility for lead paint (I.B.7), operator awareness of parents' wishes concerning several safety precautions (I.I the availability of both a fire extinguisher and emergency lighting (I.B.3), and day care activities not exposing children to hazardous situations indoors and in the outdoor play area (I.I.1, I.B.5), are practices with which Region X day care settings are substantially out of compliance.

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[2]"Day Care Centers Compliance Table: Ensuring Child's Physical Safety" in A Baseline for Improving Day Care Services in Region X, Vol. 2, UNCO, Inc., Contract No. OEC-X-72-0055, pp. 3-6a,b,c,d,e,f.

TABLE XIII

DAY CARE CENTERS COMPLIANCE TABLE: ENSURING CHILD'S PHYSICAL SAFETY

1972 FIDCR Item	Percent of Centers Not In Compliance				
	Wash. (n=74)	Oregon (n=16)	Idaho (n=15)	Alaska (n=17)	Region (n=72)
I.A.1 Operators must possess written evidence of compliance with local & state codes & regulations re: fire, safety, sanitation, & licensing.	64 4% s	64 12% s	64 7% s	64 0 s	6%
I.B.1 Safe & effective heat system. Hot appliances & similar hazards adequately screened or insulated to prevent burns.	64 4% s	64 12% s	64 7% s	64 6% s	7%
I.B.2 No highly flammable furnishings or decorations used. Flammable materials & potential poisons in storage accessible only to authorized persons.	4%	21%	2%	6%	14%
I.B.3 An approved, working fire extinguisher and emergency lighting are available in case of power failure.	72% s	75% Sp	47%	12% Sp	36%
I.B.4 Premises clean & free of hazards & undesirable conditions: rodents, vermin, fumes, excessive noise, etc.	0 s	0 Sp	7%	6%	2%
I.B.5 Outdoor play areas fenced fr. unsafe areas. Children under 10: no ponds or swimming, areas without supervision.	4% s	25% s	33% Sp	39% s	21%
I.B.6 Premises clear of splintered, sharp, protruding corners, loose or broken parts. Stairways have railings. Safety gates used with toddlers & infants. Glass doors marked.	4% s	0	0	6% s	2%
I.B.7 Paint coatings evaluated to ensure absence of lead on premises where care is provided children under age 6.	25%	38%	67%	18%	36%
I.B.8 Rooms are well lit.	4% s	0	7% s	0 s	2%
I.B.9 Water source approved by appropriate local authority. Adequate toilets & handwashing facilities available.	8% s	12% s	13% s	12% s	11%
I.B.10 All sewage & liquid waste disposed of through approved sewage system. Solid waste collected & stored in safe & sanitary manner.	64p 4% s	64p 0 s	64p 7% s	64p 0 s	2%
I.B.11 Infants & toddlers in care: sufficient diapers & provision for disposal of soiled diapers. Handwashing & bathing facilities. Toilet trainers.	0 s	6%	0 s	0	1%
I.B.12 35 sq. ft. indoor space per child exclusive of halls, bathrooms, etc., or limited indoor space offset by outdoor space if shelter & climate permit reasonable use of such space for activities normally conducted indoors.	0 s	38% s	13%	6%	13%
I.B.13 Where handicapped children given care, adequate provision made for special needs to ensure safety and comfort.	0	0	0	18%	4%
I.C.1 Day care activities & premises do not expose children to hazardous situations, per age of child.	8%	25%	27%	47%	25%
I.C.2 Caregivers help children to increase own awareness of safety practices & to learn how to avoid hazards.	0	0	0	6%	1%
I.E.1 Daily attendance records kept and all absences discussed with parents.	8%	13%	27%	18%	13%
I.E.2 Operator aware of parents' wishes concerning: (a) persons with whom child may leave facility. (b) what activities child may undertake without direct supervision. (c) what method of request may be used by school age child for out-of-facility activities.	58% Sp	44%	47%	59%	52%
I.E.3 Caregiver within seeing & hearing distance of child under 6 at all times.	0 s	0 s	0 s	0 s	0

TABLE XIV

FAMILY DAY CARE HOMES COMPLIANCE TABLE: ENSURING CHILD'S PHYSICAL SAFETY

1975 FIRCE Item	Percent of Centers Out In Compliance				
	Wash. (n=74)	Oregon (n=16)	Idaho (n=15)	Alaska (n=17)	Region (n=72)
1.4.1 Operators must possess written evidence of compliance with local & state codes & regulations re: fire, safety, sanitation, & licensing.	68 13% $	68 13%	68 11% Sp	68 22% $	68 14%
1.3.1 Safe & effective heat system. Hot appliances & similar hazards adequately screened or insulated to prevent burns.	68p 7% Sp	68p 3%	68p 4% $	68p 4% $	68p 4%
1.3.2 No highly flammable furnishings or decorations used. Flammable materials & potential poisons in storage accessible only to authorized persons.	8%	20%	21%	22%	15%
1.3.3 An approved, working fire extinguisher and emergency lighting are available in case of power failure.	68%	73%	73% Sp	48%	68%
1.3.4 Premises clean & free of hazards & undesirable conditions: rodents, vermin, fumes, excessive noise, etc.	3% Sp	12%	0 Sp	0	3%
1.3.5 Outdoor play areas fenced from unsafe areas. Children under 10: no ponds or swimming areas without supervision.	22%	42%	26% $	32% $	33%
1.3.6 Premises clear of splintered, sharp, protruding corners, loose or broken parts. Stairways have railings, safety gates used with toddlers & infants. Glass doors marked.	15%	6%	7%	0	11%
1.3.7 Paint coatings evaluated to assure absence of lead on premises where care is provided children under age 6.	44%	73%	67%	24%	53%
1.3.8 Rooms are well lit.	3% $	5%	0 $	9% $	4%
1.3.9 Water source approved by appropriate local authority. Adequate toilets & handwashing facilities available.	68 6% $	68 2%	68 0 $	68 9% Sp	4%
1.3.10 All sewage & liquid waste disposed of through approved sewage system. Solid waste collected & stored in safe & sanitary manner.	68p 2%	68p 3%	68p 0	68p 4% $	3%
1.3.11 Infants & toddlers in care: sufficient diapers & provision for disposal of soiled diapers. Handwashing & bathing facilities. Toilet trainers.	4%	4%	0	4%	4%
1.3.12 35 sq. ft. indoor space per child exclusive of halls, bathrooms, etc., or limited indoor space offset by outdoor space if shelter & climate permit reliable use of such space for activities normally conducted indoors.	4%	14%	7%	17%	10%
1.3.13 When handicapped children given care, adequate provision made for special needs to ensure safety and comfort.	4%	13%	11%	26%	9%
1.1.1 Day care activities & premises do not expose children to hazardous situations or risk of child.	39%	33%	42%	78%	47%
1.1 Care givers help children to increase own awareness of safety practices & to learn how to avoid hazards.	3%	3%	11%	9%	5%
7.1.1 Daily attendance records kept and all absences discussed with parents.	34% Sp	8%	39%	26% Sp	30%
What Operator aware of parents' wishes concerning: (a) persons with whom child may leave facility. (b) what activities child may undertake without direct supervision. (c) what method of request may be used by school age child for out-of-facility activities.	22% Sp	20%	30%	41%	28%
1.1.2 Caregiver within seeing & hearing distance of child under 6 at all times.	3% $	13 $	0 $	4% $	5%

The next set of tables from this survey show noncompliance with measures designed to ensure adequate nutrition and child health. For both family and group day care, the highest noncompliance scores were in the area of emergency preparedness (I.J.1) and planning for first aid (I.J.3). Forty-five percent (45%) of family day care providers region-wide did not have a planned source of emergency medical care acceptable to parents.

TABLE XV

DAY CARE CENTER COMPLIANCE TABLE: ENSURING ADEQUATE NUTRITION AND CHILD HEALTH

1972 FIDCR Item	Percent of Centers Not In Compliance				
	Wash. (n=24)	Oregon (n=16)	Idaho (n=15)	Alaska (n=17)	Region (n=72)
1.7.1 Each facility includes a designated place where a child can sit quietly or lie down to rest.	68 2% 5	68 2%	68 7% 5	68 0 5	2%
1.7.2 When children under 4 are given care for periods longer than 4 hours, there is a time & place for each child to sleep or rest.	0	0	0	0	0%
1.7.3 Infants are provided a crib or other safe and suitable place. Not left in crib without adult contact for longer periods.	68 2% 5	68 9%	68 4% 5	68 17% 5	4%
1.7.4 The length of time a child is allowed or encouraged to rest is determined by his own needs, considering his activity schedule.	0	0	0	0	0%
1.7.5 When children are given care during evening or night, suitable bedding and facilities for bathing are provided.	7%	4%	0	0	3%
1.8.1 If possible, information provided by parents as to child's eating habits food preference, or special needs should be considered.	34%	10%	7%	9%	12%
1.8.2 At least 1 nutritious meal offered if child in care 3 hours, 2 meals if 4 hours. Snack between lunch & breakfast, & lunch & dinner.	24% 8p	26%	20%	22% 8p	23%
1.8.3 Food is not used as a punishment or reward. Children are encouraged but not forced to eat.	18%	15%	11%	4%	13%
1.8.4 Infants are fed or supervised individually & their diet is appropriate to their special developmental needs.	0	0	0	0	0%
1.9.1 Food and beverages are obtained from sources complying with local, state and federal codes.	4%	9%	4%	9%	7%
1.9.2 Clean-up and dishwashing practices assure that cooking, serving & eating utensils are clean & sanitary.	9%	4%	4%	13%	8%
1.9.4 Drinking water is available & provided from sanitary utensils.	3%	4%	0 5	13%	5%
1.9.5 Bottle fed infants' formula preparation meets local health codes or commercially prepared formula is used.	0	0	0	0	0%
1.10.1 Written & posted plan for evacuation in case of fire or other disaster, instructions, route of plan & drills given once a year.	90%	70%	93%	87%	83%
1.10.2 Telephone on premises & immediately accessible. Emergency numbers are conspicuously posted or adjacent to phone.	26%	33%	21%	13%	27%
1.10.3 First aid treatment chart conspicuously posted. At least 1 person present who certified techniques. In larger facilities 1 caregiver to 30 children known.	68p 80% 5o	68p 74%	68p 94% 5o	68p 91% 5o	80%
1.10.4 Planned source of emergency medical care—hospital emergency room or other known to parents & acceptable to parents.	68o 43% 5	68p 27%	68p 82% 5	68p 87%	43%
1.10.5 Number of infants & toddlers unable to walk quickly & purposefully is [illegible] to number that could be safely in care of fire.	3% 5	3%	4% 5	4%	4%
1.10.7 Every facility includes a place where an ill or injured child can rest or play quietly, apart from other children yet under adult supervision.	68 8% 5	68 6%	68 22% 5	68 26% 5	10%
1.10.8 No medicines or drugs administered to any child except with written authorization of parent. All medicines or drugs clearly labeled and safely stored.	25% 5p	12%	17%	23%	19%
1.10.9 Administering agency has written evidence, all who come in contact with children free of TB, syphilis & other communicable disease.	68 12% 5o	68 0	68 70%	68 17%	15%
1.10.? Caregivers who have illness that may pose a threat to children should be relieved & adequate substitute arrangements made in advance.	68 17%	68 24%	68 25% 5	68 22% 5	21%

TABLE XVI

FAMILY DAY CARE HOMES COMPLIANCE TABLE: ENSURING ADEQUATE NUTRITION AND CHILD HEA

1972 FIDCR Item	Percent of Centers Not in Compliance				
	Wash. (n=74)	Oregon (n=16)	Idaho (n=13)	Alaska (n=17)	Region (n=7?)
1.F.1 Each facility includes a designated place where a child can sit quietly or his cots to rest.	64 Sp 9% S	64 Sp 13% S	64 Sp 7% S	64 Sp 0 S	7%
1.F.2 When children under 6 are given care for periods longer than 4 hours, there is a time & place for each child to sleep or rest.	0 Sp	0	0 S	0 S	0%
1.F.3 Infants are provided a crib or other safe and suitable place. Not left in crib without adult contact for longer periods.	64 Sp 12%	64 S 0	64 S 7%	64 Sp 29%	13%
1.F.4 The length of time a child is allowed or encouraged to rest is determined by his own needs, regardless his activity schedule.	0	0	0	0	0%
1.F.5 When children are given care during evening or night, suitable bedding and facilities for bathing are provided.	0	0	0	0	0%
1.G.1 If possible, information provided by parents as to child's eating habits food preference, or special needs should be considered.	25%	12%	0	12%	11%
1.G.2 At least 1 nutritious meal offered if child in care 3 hours, 2 meals if 5 hours. Snack between lunch & breakfast, & lunch & dinner.	23% Sp	6% Sp	32% Sp	17% Sp	21%
1.G.3 Food is not used as a punishment or reward. Children are encouraged but not forced to eat.	25%	6% S	7%	24%	14%
1.G.4 Infants are fed or supervised individually & their diet is appropriate to their special developmental needs.	25% S	13% S	0 S	12%	13%
1.H.1 Food and beverages are obtained from sources complying with local, state and federal codes.	25% S	13%	32%	12%	21%
1.H.2 Clean-up and dishwashing practices ensure that cooking, serving & eating utensils are clean & sanitary.	8% S	6% S	13% S	24% S	13%
1.H.4 Drinking water is available & provided from sanitary utensils.	4% S	0 S	0 Sp	12% Sp	4%
1.H.5 Bottle fed infants: formula preparation meets local health codes or commercially prepared formula is used.	0	0	0	0	0%
1.I.1 Written & posted plan for evacuation in case of fire or other disaster, caregivers aware of plan & drills given once a year.	67% Sp	69%	72%	71%	69%
1.I.2 Telephone on premises & immediately accessible. Emergency numbers are conspicuously posted or adjacent to phone.	12%	6% S	27%	6% S	12%
1.I.3 First aid treatment chart conspicuously posted. At least 1 person present understands techniques. In larger facilities 1 caregiver to 30 children known.	64p 29% S	64p 12% Sp	64p 87% Sp	64p 65% Sp	44%
1.I.4 Planned source of emergency medical care--hospital emergency room or other known to caregivers and acceptable to parents.	64p 0 S	64p 0 S	64p 7% S	64p 6% S	2%
1.I.5 Number of infants & toddlers unable to walk quickly & purposefully is limited to number that could be carried in case of fire.	0	6%	0	0	1%
1.I.7 Every facility includes a place where an ill or injured child can rest or play quietly, apart from other children yet under adult supervision.	64 S 8%	64 S 0	64 S 7%	64 S 12%	7%
1.J.8 No medicines or drugs administered to any child except with written permission of parent. All medicines or drugs clearly labeled and safely stored.	8% Sp	6% Sp	14%	6%	9%
1.K.1 Administering agency has written evidence, all who have in contact with children free of TB, syphilis & other communicable disease.	64 Sp 8%	64 0	64 40%	64 S 0	11%
1.K.2 Caregivers who know illness that may pose a threat to children should be relieved & adequate substitute arrangements made in advance.	33%	44%	33%	29%	35%

The HEW Audit

One of the most useful features about both the HAT data and the UNCO Region X study is their systematic documentation of noncompliance findings and of compliance successes. This was not true for the HEW audit of federally funded day care in nine states. Results of this audit were published in November, 1974 and had been collected for several years prior to that. Violations of licensing regulations and the Federal Interagency Day Care Requirements were noted. Although the Review of Child Care Services Provided Under Title IV, Social Security Act[3] does present a picture of some horrifying health and safety hazards found in day care settings, it does not list those areas in which day care programs were in compliance. Some of the results of this review are summarized below:

RESULTS OF HEALTH AND SAFETY REVIEW

Care Type	Number Examined	Number Not Meeting Requirements
Day Care Centers	453	363
Family Day Care Homes (includes care in the homes of relatives or friends)	50a	21
In-Home Care	49	41
Totals	552	425

a Excludes 55 facilities which were examined in Virginia but for which the records available did not disclose compliance with health and safety standards.

[3] Audit Control Number 13-50009, available from the U.S. General Accounting Office.

Joint inspections by auditors and state officials were made of state records on compliance with required physical examinations for children and caregivers and at selected day care centers. A list of some of the health and safety violations—some of which were similar to discrepancies uncovered in previous licensing inspections—is provided below:

> Medications were stored in places accessible to children.
>
> Poisons and materials with warning labels were stored in unattended and unlocked rooms.
>
> Kitchen facilities were not adequate. At one center food sat uncovered in the refrigerator. Foods were not separately stored away from medicines, hair sprays, and cleaning supplies.
>
> Children were cared for in a room without a suitable fireproof partition separating it from the adjacent furnace room.
>
> At one center two sewer lines were located in the Kindergarten room. One line had a loosely fitting wooden cap and was plugged with a baby doll. We were told that if the doll was removed and a commode located in another area was flushed, raw sewage would spill onto the Kindergarten floor.
>
> Outdoor play areas were inadequate. Broken glass and bottles were noted in play areas. Also, areas were not enclosed, and playground equipment was lacking, broken, rusting and not secured. Children were observed playing on sidewalks located on a main street.[4]

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[4]Ibid., p. 21.

District of Columbia Environmental Health Evaluation

An Environmental Health Evaluation of 221 day care centers in Washington, D.C. was conducted by Mr. Bailus Walker of the D.C. Environmental Health Administration and Mr. Richard Lane of the D.C. Bureau of Institutional Hygiene and Radiological Health. Although this report carefully reflected both compliance and noncompliance areas, we are not able to reproduce it in its entirety here. Consequently, we have provided results that are relevant to the risk areas we discussed in Section II.

None percent of the day care centers surveyed had evidence of ineffective control services for insects and rodents.

Seventeen percent showed evidence of deficiencies in basic environmental sanitation (the greatest percentage of deficient centers were in this category).

Twelve percent showed improper handling and storage of solid waste.

Two percent had obvious deficiencies in the quality and quantity of lighting.

One percent had inadequate heat and ventilation necessary to meet general physiological needs.

Eight percent lacked adequate sanitary supplies.

Fourteen percent had defective plumbing.

Fourteen percent had exterior or interior safety hazards.

It's important to note the presence of conditions like these several years after the HEW Audit had detailed serious health and safety deficiencies in the District of Columbia and urged corrective action. It is also important to note that 123 centers, or 56%, showed no evidence of environmental hazards.

The authors conclude: "....we found evidence of a conscientious effort of the day care managers to provide an environment in which physical and biological stresses are minimized." This finding is also evidenced by the results of

the Health Advocacy Training Project in that almost all the programs (including centers and family day care homes) with health and safety deficiencies voluntarily enrolled staff members in the Health Advocacy Course and most showed significant improvement in the health components of their programs by the time of the post-traini assessment (one year from the pre-assessment).

External

The characteristics of day care which relate to program linkages with outside resources—described previously as external characteristics (page 105) can either accelerate or diminish health and safety risks in day care. We believe the available information strongly suggests that (1) regulation is currently the major external means of reducing health and safety risks in day care; and (2) the regulating process is confusing and inadequate.

The 1971 Day Care Licensing Study

The 1971 HEW Day Care Licensing Study described in the opening pages of its summary report[3] some of the painful conclusions resulting from this national study:

> State and local agency standards for day care licensing have been developed by different people under different circumstances for different reasons, and very often without consideration of parallel or conflicting requirements of other agencies. This piecemeal approach, so often used in the past, is simply too inefficient and costly to be allowed to continue unchecked. In most cases, it is the applicant who must spend the time and pay the cost of assembling a comprehensible view of the divergent requirements he must meet. The applicant must resolve the conflicting requirements to the agreement of all agencies requiring compliance with their rules.
>
> Some requirements are unrealistically stringent. Local requirements considered over-stringent by operators of day care facilities result more from default than design; these requirements often

[3] Day Care Licensing Study Summary Report or Phase I: State and Local Day Care Licensing Requirements, (DHEW Publication No. OCD 73-1066).

occur when all day care homes and/or centers are classed categorically with a group of other uses with higher risk factors resulting in a need for higher safety standards than are necessary for day care facilities. Many of the requirements considered unreasonable by operators of day care facilities could be changed if local officials were properly approached and provided with the information needed to improve the local requirements.

Existing standards are not interpreted uniformly from one year to the next and from one geographic area to the next due to staff turnover and inadequate training programs.

Central control of the speed of licensing is weakened by the layers of local zoning, building, etc., requirements which are out of the jurisdiction of the licensing agency, and by reliance on the cooperation of inspecting agencies which give low priority to day care inspections.

Some inspectors tend to apply different criteria for evaluating facility and program for white and minority day care centers.

On the basis of statements by the licensing agencies in all six states visited in the follow-up survey, a major concern of licensing agencies is the lack of strong legal teeth they need to revoke the license of a "bad" day care facility and keep the facility closed.

Since the current federal regulation for health and safety relies primarily on requiring compliance with state and local codes,[6] we thought it useful to discuss some of the findings of the Day Care Licensing Study in the light of our own experiences. The complexities of current state regulation of health and safety in day care are, in our experience, quite difficult to understand. One very important element—brought to light by the Licensing Study—is that health and safety regulation is <u>not</u> done by state <u>licensing</u> regulations <u>alone</u>. Nor in many cases is it done by state regulatory officials familiar with day care, acting under the authority of state laws developed for the regulation of health and safety in day care. Instead a large number and variety of state and local codes, often developed for the regulation of non-child care settings such as restaurants or hospitals become involved in a difficult and

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[6] <u>The Federal Interagency Day Care Requirements</u>, DHEW Publication No. (OCD)/6-31081, September 23, 1968.

ineffective process of eliminating health and safety risks in day care. To our knowledge, no one has ever assembled all the fire, building, health and sanitation codes that are applied to day care, much less read them. CEMREL, a consulting firm which prepared a comparison of federal and state standards for day care in 1972, did obtain information from state licensing authorities about the contents of codes used in many states. However, it was not possible to obtain and evaluate—except for a few states—all of the actual codes. This is hardly surprising, since many of the local codes are developed by municipalities and other small units of government and are very difficult to obtain.

Given fifty states, and the many municipalities within those states, it's barely possible to envision the magnitude of assembling so many codes. Even within states, it may be difficult, impossible or seen as irrelevant for state licensing units to collect and evaluate the adequacy of these codes.[7] "In ten years as a licensing consultant to the state of Massachusetts" says Gwen Morgan, "I have not been able to get hold of all the Massachusetts health codes adopted at different times by different divisions within the public health bureaucracy—nor have I been able to receive solid information about which provisions are applicable to day care."[8] One author's experience in Pennsylvania is that child care licensing agency personnel must be urged again and again to be aware of health and safety code contents which they find foreign to their social service and child development orientation. Pennsylvania's Public Welfare

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[7]Gwen Morgan, Regulation of Early Childhood Programs, "It's Time to Change the Rules on Licensing". Day Care and Early Education.
HEW, State and Local Day Care Licensing Requirements

[8]Personal communication from Gwen Morgan, June, 1976.

Code clearly assigns the supervisory and overall protective responsibility for children in any institution to DPW. There is a cooperative agreement between DPW and the Department of Environmental Resources to provide supervision it requires of health matters, but DPW staff must initiate a request for service and act on the advice provided by DER to them. The situation is further complicated by the fact that in some municipalities, e.g., Philadelphia Pittsburgh, and Chester, local Health Department jurisdiction replaces that of DER. Sometimes the Municipal Health Department uses an equivalent of the DER codes, but the way the codes are applied to day care is far from uniform. Many DPW staff don't know that the agreement exists; most do not know how to use it. As an enforcement agency, DPW lacks statuatory power to do more than refuse to issue a license. We agree with Gwen Morgan that failure to relate code to statuate to enforcement creates the difficult problems of inconsistent standards and generalized time wasting and risk taking.

The 1971 Day Care Licensing Study identified another problem that exists in the reliance on these codes: gaps. When fire, health and sanitation codes that have been developed for other facilities are applied, all the risks that are specific to very young children are not controlled (e.g., how the adult will evacuate more than two non-ambulatory children at the same time). Thus, there are states where a provision such as knowledge of first aid or specific evaluation of the condition of playground equipment is not required or regulated by <u>anybody</u>.[9]

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[9]HEW, <u>Guidelines for Day Care Licensing</u>, Office of Child Development, Bureau of Child Development Services, DHEW Publication No. OCD 73-1053.

Reliance on these separate codes promotes a third problem: conflicting inconsistencies. By the time they've been in the field for a few years, most day care providers and advocates in our experience have collected a rich store of anecdotes regarding the inconsistencies that providers have to put up with in order to satisfy the conflicting demands of different regulatory specialists. Stairway entrance guards required by safety specialists are prohibited by fire marshals; the ventilation that is considered desirable by sanitation inspectors may be considered hazardous by the fire department. In one southeastern state, day care providers were known to take a door down when one set of inspectors visited and put the door back up before the other inspectors arrived.[10]

Some of the impact of these problems in (1) draining off energies that could be more profitably spent in looking after children; and (2) inhibiting the growth of day care supply were described in the Day Care Licensing Study.

The Abt Associates Study of exemplary day care programs also found that it required approximately one man year to obtain a license, partly because of the regulating processes for health and safety.[11]

Despite the fact that difficulties in complying with fire, building and sanitation codes were found by the Day Care Licensing Study to be a major source of delays or denials in the licensing process, this study also found

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[10] Personal communication from Nancy Travis, Southern Regional Education Board, May, 1976.

[11] Personal communication from Gwen Morgan, May, 1976.

general support among providers for these codes:

> While a few operators interviewed were at odds with the local inspector, most applicants interviewed who had to do extensive and costly remodeling of their facility to meet the requirements of fire inspectors generally did not feel that the requirements were unrealistic. Delays attributable to fire and safety are longer than for any other area of concern, 65 days as indicated by the fifty state licensing authorities due to the applicants' lack of funds to eliminate deficiencies.

A high degree of support for sanitation inspections was also cited despite the problem areas noted by providers in meeting defects found in sanitation inspections:

> State and local environmental health personnel generally utilize a U.S. Public Health Service, locally altered, inspection form. A copy of this form is left with the facility operator. This outlines in writing for the operator what must be accomplished to become certified. Day care facility operators interviewed felt more secure in the area of sanitation as a result of receiving this inspection evaluation form.

We ask the reader to note this provider support in the light of the similar findings of provider and expert support for health and safety tasks reported by the Texas Day Care Study (page 88).

The 1972 CEMREL Study[12]

A report comparing federal and state standards as of February, 1972 published by CEMREL corroborates the findings of the HEW Day Care Licensing Study. The CEMREL report also provides an excellent source of information about broad state regulation of health and safety in day care, since the researchers systematically went beyond the state licensing regulations in their search for information about state regulations that control for health and safety risks. Summary tables of some of the CEMREL findings relevant to state regulation of health, fire, nutrition, sanitation and safety risks for all fifty states have been reproduced on the following pages.

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[12]Central Midwestern Regional Educational Lab.

O YES

O NO

☆ NO PROVISION

	Bubbler Fountains Prohibited ✓	Approved Water Required ✓	Non-Contaminable Plumbing Required ✓	Labeled Medications Required ✓	Unused Medications Disposal Required ✓	Animal Control Required ✓	Daily Health Inspections Required ✓	Children with Communicable Disease Permitted ✓	Staff with Communicable Disease Prohibited ✓
ALABAMA	O	O	O	☆	☆	O	O	O	O
ALASKA	O	O	☆	☆	☆	O	O	☆	O
ARIZONA	O	O	O	☆	☆	O	O	☆	O
ARKANSAS	☆	O	O	☆	☆	O	O	☆	O
CALIFORNIA	O	O	O	☆	☆	O	O	☆	O
COLORADO	O	O	O	☆	☆	O	O	☆	O
CONNECTICUT	O	O	O	☆	☆	O	O	☆	O
DELAWARE	O	O	O	☆	☆	O	O	☆	O
FLORIDA	☆	O	O	☆	☆	O	O	☆	O
GEORGIA	☆	O	O	☆	☆	O	O	☆	O
HAWAII	☆	O	☆	☆	☆	O	O	☆	O
IDAHO	☆	O	☆	☆	☆	O	O	☆	O
ILLINOIS	☆	O	☆	☆	☆	O	O	☆	O
INDIANA	☆	O	☆	☆	☆	O	O	☆	O
IOWA	☆	O	☆	☆	☆	O	O	☆	O
KANSAS	☆	☆	☆	☆	☆	O	O	☆	O
KENTUCKY	☆	☆	☆	☆	☆	O	O	☆	O
LOUISIANA	☆	☆	☆	☆	☆	O	O	☆	O
MAINE	☆	O	☆	☆	☆	O	O	☆	O
MARYLAND	O	☆	☆	☆	☆	O	O	☆	O
MASSACHUSETTS	☆	O	☆	☆	☆	O	O	☆	O
MICHIGAN	☆	O	☆	☆	☆	O	O	☆	O
MINNESOTA	☆	O	☆	☆	☆	O	O	☆	O
MISSISSIPPI	☆	O	☆	☆	☆	O	O	☆	O
MISSOURI	☆	O	☆	☆	☆	O	O	☆	O
MONTANA	☆	O	☆	☆	☆	O	O	☆	O
NEBRASKA	☆	O	☆	☆	☆	O	O	☆	O
NEVADA	☆	☆	☆	☆	☆	O	O	☆	O
NEW HAMPSHIRE	☆	O	☆	☆	☆	O	O	☆	O
NEW JERSEY	☆	☆	☆	☆	☆	O	O	☆	O
NEW MEXICO	☆	O	☆	☆	☆	O	O	☆	O
NEW YORK	O	☆	O	O	O	O	O	O	O
NO CAROLINA	☆	O	☆	☆	☆	O	O	☆	O
NO DAKOTA	☆	O	☆	☆	☆	O	O	☆	O
OHIO	☆	O	☆	☆	☆	O	O	☆	O
OKLAHOMA	☆	O	☆	☆	☆	O	O	☆	O
OREGON	☆	O	☆	☆	☆	O	O	☆	O
PENNSYLVANIA	☆	O	☆	☆	☆	O	O	☆	O
RHODE ISLAND	☆	O	☆	☆	☆	O	O	☆	O
SO CAROLINA	☆	O	☆	☆	☆	O	O	☆	O
SO DAKOTA	☆	O	☆	☆	☆	O	O	☆	O
TENNESSEE	☆	O	☆	☆	☆	O	O	☆	O
TEXAS	☆	O	☆	☆	☆	O	O	☆	O
UTAH	☆	O	☆	☆	☆	O	O	☆	O
VERMONT	☆	O	☆	☆	☆	O	O	☆	O
VIRGINIA	☆	O	☆	☆	☆	O	O	☆	O
WASHINGTON	☆	O	☆	☆	☆	O	O	☆	O
WEST VIRGINIA	☆	O	☆	☆	☆	O	O	☆	O
WISCONSIN	☆	O	☆	☆	☆	O	O	☆	O
WYOMING	☆	O	☆	☆	☆	O	O	☆	O
FEDERAL	☆	O	☆	☆	☆	O	O	☆	O

	Door & Window Screening Required ✓	Stairway Handrails Required ✓	Insect & Rodent Free Interiors Required	Well-Drained Site Required ✓	Windows & Stairway Guards Required ✓	Safe Equipment Specified	Safe Installation of Equipment Required ✓	Daily Nutrition Requirements Specified ✓	Common Toilet Articles Prohibited ✓	Sanitary Toilet Facilities Required ✓	Common Drinking Cups Prohibited ✓
ALABAMA	O	★	★	★	★	O	O	O	★	★	★
ALASKA	★	O	O	O	O	O	O	O	O	O	O
ARIZONA	★	O	O	O	O	O	O	O	O	O	O
ARKANSAS	O	O	O	O	O	O	O	O	O	O	O
CALIFORNIA	O	O	O	O	O	O	O	O	O	O	O
COLORADO	O	O	O	O	O	O	O	O	O	O	O
CONNECTICUT	O	O	O	O	O	O	O	O	O	O	O
DELAWARE	O	O	O	O	O	O	O	O	O	O	O
FLORIDA	O	O	O	O	O	O	O	O	O	O	O
GEORGIA	O	O	O	O	O	O	O	O	O	O	O
HAWAII	O	O	O	O	O	O	O	O	O	O	O
IDAHO	O	O	O	O	O	O	O	O	O	O	O
ILLINOIS	O	O	O	O	O	O	O	O	O	O	O
INDIANA	O	O	O	O	O	O	O	O	O	O	O
IOWA	O	O	O	O	O	O	O	O	O	O	O
KANSAS	O	O	O	O	O	O	O	O	O	O	O
KENTUCKY	O	O	O	O	O	O	O	O	O	O	O
LOUISIANA	O	O	O	O	O	O	O	O	O	O	O
MAINE	O	O	O	O	O	O	O	O	O	O	O
MARYLAND	O	O	O	O	O	O	O	O	O	O	O
MASSACHUSETTS	O	O	O	O	O	O	O	O	O	O	O
MICHIGAN	O	O	O	O	O	O	O	O	O	O	O
MINNESOTA	O	O	O	O	O	O	O	O	O	O	O
MISSISSIPPI	O	O	O	O	O	O	O	O	O	O	O
MISSOURI	O	O	O	O	O	O	O	O	O	O	O
MONTANA	O	O	O	O	O	O	O	O	O	O	O
NEBRASKA	O	O	O	O	O	O	O	O	O	O	O
NEVADA	O	O	O	O	O	O	O	O	O	O	O
NEW HAMPSHIRE	O	O	O	O	O	O	O	O	O	O	O
NEW JERSEY	O	O	O	O	O	O	O	O	O	O	O
NEW MEXICO	O	O	O	O	O	O	O	O	O	O	O
NEW YORK	O	O	O	O	O	O	O	O	O	O	O
NO CAROLINA	O	O	O	O	O	O	O	O	O	O	O
NO DAKOTA	O	O	O	O	O	O	O	O	O	O	O
OHIO	O	O	O	O	O	O	O	O	O	O	O
OKLAHOMA	O	O	O	O	O	O	O	O	O	O	O
OREGON	O	O	O	O	O	O	O	O	O	O	O
PENNSYLVANIA	O	O	O	O	O	O	O	O	O	O	O
RHODE ISLAND	O	O	O	O	O	O	O	O	O	O	O
SO CAROLINA	O	O	O	O	O	O	O	O	O	O	O
SO DAKOTA	O	O	O	O	O	O	O	O	O	O	O
TENNESSEE	O	O	O	O	O	O	O	O	O	O	O
TEXAS	O	O	O	O	O	O	O	O	O	O	O
UTAH	O	O	O	O	O	O	O	O	O	O	O
VERMONT	O	O	O	O	O	O	O	O	O	O	O
VIRGINIA	O	O	O	O	O	O	O	O	O	O	O
WASHINGTON	O	O	O	O	O	O	O	O	O	O	O
WEST VIRGINIA	O	O	O	O	O	O	O	O	O	O	O
WISCONSIN	O	O	O	O	O	O	O	O	O	O	O
WYOMING	O	O	O	O	O	O	O	O	O	O	O
FEDERAL	O	O	O	O	O	O	O	O	O	O	O

	Fire Resistance Construction Required ✓	Number and Area of Window Specified ✓	First Aid Kit Required ✓	First Aid Supplies Specified ✓	Child Inaccessible First Aid Equipment ✓	Staff Qualified in First Aid Treatment Required ✓	Number of Exits Specified ✓	Exit Distances Specified ✓	Marked Exit Doors Required ✓	Swing of Exit Doors Specified ✓	Number of Basement Exits Specified ✓
ALABAMA	☆	☆	○	○	○	☆	☆	☆	☆	○	☆
ALASKA	☆	☆	○	☆	☆	○	○	☆	☆	○	○
ARIZONA	☆	☆	○	☆	☆	○	○	☆	☆	○	○
ARKANSAS	☆	☆	○	☆	☆	○	○	☆	☆	○	○
CALIFORNIA	☆	☆	○	☆	☆	○	○	☆	☆	○	○
COLORADO	☆	☆	○	☆	☆	○	○	☆	☆	○	○
CONNECTICUT	☆	☆	○	☆	☆	○	○	☆	☆	○	○
DELAWARE	○	☆	○	☆	☆	○	○	☆	☆	○	○
FLORIDA	☆	☆	○	☆	☆	○	○	☆	☆	○	○
GEORGIA	☆	☆	○	☆	☆	○	○	☆	☆	○	○
HAWAII	☆	☆	○	☆	☆	○	○	☆	☆	○	○
IDAHO	☆	☆	○	☆	☆	○	○	☆	☆	○	○
ILLINOIS	☆	☆	○	☆	☆	○	○	☆	☆	○	○
INDIANA	☆	☆	○	☆	☆	○	○	☆	☆	○	○
IOWA	☆	☆	○	☆	☆	○	○	☆	☆	○	○
KANSAS	☆	☆	○	☆	☆	○	○	☆	☆	○	○
KENTUCKY	☆	☆	○	☆	☆	○	○	☆	☆	○	○
LOUISIANA	☆	☆	○	☆	☆	○	○	☆	☆	○	○
MAINE	☆	☆	○	☆	☆	○	○	☆	☆	○	○
MARYLAND	☆	☆	○	☆	☆	○	○	☆	☆	○	○
MASSACHUSETTS	☆	☆	○	☆	☆	○	○	☆	☆	○	○
MICHIGAN	☆	☆	○	☆	☆	○	○	☆	☆	○	○
MINNESOTA	☆	☆	○	☆	☆	○	○	☆	☆	○	○
MISSISSIPPI	☆	☆	○	☆	☆	○	○	☆	☆	○	○
MISSOURI	☆	☆	○	☆	☆	○	○	☆	☆	○	○
MONTANA	☆	☆	○	☆	☆	○	○	☆	☆	○	○
NEBRASKA	☆	☆	○	☆	☆	○	○	☆	☆	○	○
NEVADA	☆	☆	○	☆	☆	○	○	☆	☆	○	○
NEW HAMPSHIRE	☆	☆	○	☆	☆	○	○	☆	☆	○	○
NEW JERSEY	☆	☆	○	☆	☆	○	○	☆	☆	○	○
NEW MEXICO	☆	☆	○	☆	☆	○	○	☆	☆	○	○
NEW YORK	☆	☆	○	☆	☆	○	○	☆	☆	○	○
NO CAROLINA	☆	☆	○	☆	☆	○	○	☆	☆	○	○
NO DAKOTA	☆	☆	○	☆	☆	○	○	☆	☆	○	○
OHIO	☆	☆	○	☆	☆	○	○	☆	☆	○	○
OKLAHOMA	○	☆	○	☆	☆	○	○	☆	☆	○	○
OREGON	☆	☆	○	☆	☆	○	○	☆	☆	○	○
PENNSYLVANIA	☆	☆	○	☆	☆	○	○	☆	☆	○	○
RHODE ISLAND	☆	☆	○	☆	☆	○	○	☆	☆	○	○
SO CAROLINA	☆	☆	○	☆	☆	○	○	☆	☆	○	○
SO DAKOTA	☆	☆	○	☆	☆	○	○	☆	☆	○	○
TENNESSEE	☆	☆	○	☆	☆	○	○	☆	☆	○	○
TEXAS	☆	☆	○	☆	☆	○	○	☆	☆	○	○
UTAH	☆	☆	○	☆	☆	○	○	☆	☆	○	○
VERMONT	☆	☆	○	☆	☆	○	○	☆	☆	○	○
VIRGINIA	☆	☆	○	☆	☆	○	○	☆	☆	○	○
WASHINGTON	☆	☆	○	☆	☆	○	○	☆	☆	○	○
WEST VIRGINIA	☆	☆	○	☆	☆	○	○	☆	☆	○	○
WISCONSIN	☆	☆	○	☆	☆	○	○	☆	☆	○	○
WYOMING	☆	☆	○	☆	☆	○	○	☆	☆	○	○
FEDERAL	○	☆	○	☆	☆	○	☆	☆	☆	☆	☆

We ask the reader to note the lack of regulations for fire, safety, sanitation, management of injury and accident prevention. The extent of these deficiencies astonished us—so much so that we tracked down Dr. Kelly, the Project Manager for this investigation and inquired further into his methodology. He explained that some states did furnish all the codes and regulations used in granting permission to operate within that state. Using that material project investigators developed a universal set of all the requirements that would (and in some states, did) control for all the different risks in day care—e.g., fire safety, ventilation, equipment, curriculum, parent involvement and so forth. As each state forwarded its licensing regulations, project investigators checked the contents of those regulations against the universal set. If gaps or deficiencies existed, the state was re-contacted in writing, and asked how, for example, fire safety was regulated and what specifically were the requirements in force. Dr. Kelly stated that the response rate from the states to these written questions was quite good. He feels that the CEMREL report is an accurate reflection of state regulation of risks for young children in a group day care.[13]

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[13]Personal communication from Dr. Harry Kelly, August, 1976.

The 1975 OCD Report on Federal and State Standards

Despite the findings of reports published in previous years as well as the development of the HEW Guide to Day Care Licensing, the coordination of the elements of state regulations into comprehensive day care standards within states crawls along slowly indeed.

An extremely useful memo prepared by Ms. Edna Hopkins of the Office of Child Development in May, 1975 compared the consistency of state licensing regulations with selected provisions of the FIDCR. The results of this analysis clearly showed that states are still extremely inconsistent in the content of state licensing regulations and that children are at risk because of these inadequacies. Selecting a few standards investigated by the OCD report—standards unlikely to be covered in the state fire or sanitation codes which were not investigated by this report—demonstrates the conditions resulting from the present regulatory process. For example:

> Only 14 states prohibit the use of lead or toxic paint.[14]
>
> Only 35 states either require or recommend staff training, or familiarity with first aid procedures.
>
> Only 8 of these 35 require or recommend staff orientation in accident and infection prevention.
>
> Only 41 states require and one recommends that there be provision for emergency medical services.
>
> Only 36 states articulate ventilation requirements and of these, only 14 states require and one recommends that facilities be well, adequately or properly ventilated while the other 22 specify requirements for windows or mechanical systems.

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[14] Personal communication from Mr. Mike Slifka, Fire Research Division, National Bureau of Standards: Although building codes in various localities might prohibit lead paint, one of the problems that the fire protection people have had with the building codes is that they are not retroactive. They prohibit hazards only in construction of new buildings.

Only 25 states require health evaluations for the children which range from a physician write off on the child's health to a complete clinical assessment.

Only 2 states require dental examinations.

Only 2 of 37 states which require daily evaluations of children for symptoms of illness require staff training in illness observation.

Only 32 states require a telephone on the center premises.

While 46 states require some sort of staff health assessment, only 10 states require that all volunteers be subject to the same health requirements as other staff.

The Office of Child Development is planning another, updated review of the state licensing regulations, but there are no new data available at this date.

The Day Care Management Study

We have reviewed and are able to present in its preliminary form some of the extremely valuable information from this fifty-state analysis of nine sub-systems used by states in the implementation of Social Security Act-funded day care: planning, needs assessment, information and referral, eligibility determination, training and technical assistance, licensing, monitoring, fiscal management and evaluation. Some of the preliminary reports of the Day Care Management Study indicate that:

Within the last two years, twenty states have published new standards for group day care and nineteen states new standards for family day care homes.[15] Twenty-three states use center standards published before 1973 (seven of those use standards published in the 1950's and 60's). Nineteen states use family day care standards published before 1973 (eight of these use standards published in the 1950's and 60's).

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[15] We ask the reader to remember that these figures are taken from draft documents and may change slightly in the final report.

Ten states have no standards for children under the age of two and those states that do have staff-child ratio requirements for infant care vary from 1:3 to 1:10 for children under the age of one. Although this study does not examine the adequacy of standards, it does describe the areas covered by standards. One finding relevant to this research presented in this paper is that approximately one half the states have no standards for day care transportation at all.

The time required to complete a licensing study varied form 3 weeks in one state up to 18 months. Wide variation occurred also in the total number of visits per licensing study (including visits from fire and safety inspectors, etc.), from one visit up to 15.

The frequency of monitoring contacts also varies. Four states monitor centers monthly, one bi-monthly, fourteen quarterly, ten semi-annually, eighteen annually and five irregularly. As for homes, monitoring contacts are fairly similar, except seven states monitor irregularly and three states make no monitoring contacts at all. The dominant methods of monitoring used by the states were announced visits (44 states) unannounced visits (34 states) phone calls (18 states) and mailed forms (9 states).

In monitoring, nine states do not use any kind of formalized instrument such as a checklist; three states use instruments limited in the types of facilities to which they are applied, thirty-four states use a formal instrument throughout the state and in four states, an instrument is used in some local jurisdictions.

Forty-six states monitor centers and thirty-six states monitor homes for compliance with state standards. But only twenty-eight states monitor centers and twenty-three states currently monitor homes for compliance with the FIDCR.

The physical plant and health provisions ranked second as areas of compliance difficulty. Staff-child ratios ranked first.

Only two states provide training and/or technical assistance to state and local staff in the area of specifics regarding requirements relative to the physical plants of providers. Only six states provide training and/or technical assistance to providers in the area of "physical plant".

Providers and licensing workers are identified as most in need of further training.

Perhaps most indicative of all the findings, however, are the results of a survey related to reimbursement rates in the fifty states. The preliminary report of the study in this area concludes:

> Primary basis (for rate-setting) was identified as 'actual and necessary costs' followed by 'prevailing community rates'. In eight states prevailing rates and/or actual costs were limited by an agency-established maximum. In twelve states, the rate was established by the government without regard to prevailing rates or actual costs (6 of these were legislatively fixed and 6 were agency established). Several indicated that rates were locally established and two specified the minimum wage as the determinant.

Wide variations in rate range, per full-time day occured throughout the fifty states from as low as $1.72 per child per day in one state up to $18. per day in another state. Pacific Consultants, chief investigators for the Day Care Management Study conclude:

> Given the extreme variations in these rates, it is difficult to ascertain whether they are in fact 'reasonable and equitable' and further study of this matter is recommended.

We heartily agree with this conclusion. Clearly one of the essential keys to the protection of young children in day care is locked up in federal, state and local vaults of ignorance about the costs of such protection and the setting of rates on the basis of those costs.

Linkages with Health Resources

Finally, we would like to briefly leave the areas of training, regulation and funding and focus on health resource linkages as an external program characteristic which reduces health and safety risks in day care.

In Section III of this paper a continuum was described from direct provision of all health services to a role limited to coordination with existing health services with a variety of points along that continuum at which day care and health care systems might interlock.

We know that those linkages are very important. So important are they, that there is a strong temptation to simply require day care provider arrangement of screening with local health resources (as is currently done by the FIDCR) or to require day care linkage with EPSDT, the national health screening program mandated for Medicaid-eligible children. However, we know that those linkages are often much more difficult to create than would seem from "a Washington perspective". Comments received from two specialists who have carried out responsibilities for coordinating child health and day care over a broad geographical area document our own observations about frequent obstacles to health care-day care linkages. We have included here excerpts from papers sent to us by Nancy Travis, who directed the Denver Southeastern Day Care Project in seven southeastern states and Anne Shenberger, who is a Health Services Specialist for the State of Pennsylvania and was employed for the purpose of facilitating coordination between EPSDT and related programs like day care. Ms. Travis describes on the following page some conditions encountered during the Denver Project:

"One thing that was very apparent was the discrepancy between what some of us as child development people saw as needs and what the medical profession saw. For example, our pediatrics consultant and others did not see any need to do some of what I saw as routine tests, such as a urinalysis and the blood test, unless there was some clinical finding that indicated it. Stool tests also were just done where warranted in spite of the fact that ova and parasites are prevalent in the South. We had to argue long and hard for dental screenings. Even now in Georgia the dental people are saying that with the limited resources, the first priority is most appropriately the school age child as opposed to preschoolers. Yet, it is very common in the rural and Appalachian areas to see children whose baby teeth are little black pointed things sticking out of their gums. They are also very addicted to cokes or sodas.

We had other problems with the medical community. The local doctors that served medicare/medicaid patients absolutely refused to fill out our medical form. While our health form contained a number of pages, some of which could be filled out by staff personnel, parents or others, the record of the physical examination itself was only one page. However, they said they did not have time to do this. In most instances we used public health clinics. They are quite different in the South than I found them to be in the Midwest—in that they provide many more direct services. We tried very hard to get them to be more responsive to our needs but unfortunately made little impact. Initially, we had hoped that the parents could take the responsibility for getting the medicals. We did hold to this pretty much in terms of the initial physical exam but found that it was not practical to expect working mothers to make all of the necessary trips for the immunizations. Most of our parents were marginally employed and they either lost time or cut back on their income, or if there were too many absences they might actually lose their jobs. Consequently, it became the role of our social workers to take the children to the clinics.

Many of the clinics would be doing immunizations only one afternoon a week and sometimes you could wait all afternoon and still not be taken care of. They consistently had rules like—only four children from the same family could be scheduled on a given day, and they considered the day care center to be a "family". The reason for this was if one family did not come it left too much cancelled time. This was not really valid for the day care center since we were quite reliable in keeping appointments, but also we had enough children so that others could be supplemented. In only a very few cases did we have any luck at getting the health personnel to come to the center—even to read TB tests or to give immunizations. It was only because we put a great deal of stress on it that our record for immunizations was as good as it was.

Another issue that we talked about was the sickle-cell anemia. In the beginning, our pediatric consultant felt that it was not a test to be included since if the child had the disease, it would

be apparent, and if they merely carried the trait it had no immediate impact. As time went on, more sickle-cell anemia screening was done—really on pressure from the black community. I had some real concern about the handling of the findings. It seemed to me that if the test was done that the results should be shared with the families and yet, I felt if this was to be done, it should be done with skill and sensitivity. I also felt that if I were a single mother with three or four preschool children, to receive the knowledge that my child had this trait and should take it into consideration when selecting a mate, that it might just be one more thing that I wanted to know about. We did some training with our social workers on how to handle this."[16]

From another perspective, Ms. Shenberger describes some of the difficulties encountered in coordination between day care and EPSDT:

"The need for a regional coordinating body to facilitate the coordination process between the EPSDT and day care programs has existed since the inception of the EPSDT Program in Pennsylvania. The plan for EPSDT Program implementation is complex, dividing responsibility between the Department of Public Welfare and an administrative contractor. A description of program responsibilities is not simple for the five county Region which includes Philadelphia and the four suburban counties which surround it (Bucks, Chester, Delaware and Montgomery). In Philadelphia most of the EPSDT Program is implemented through a contractor, the Philadelphia Health Management Corporation (PHMC). In the four counties, a smaller portion of the program is contracted for from PHMC. That portion of the program which is contracted for throughout the Region consists of administrative responsibilities including data analysis and payment of EPSDT screening providers, certification and recertification of EPSDT screening provider sites, training of EPSDT provider staff and coordination of EPSDT with existing programs and resources within the Region. Throughout the Region follow through of health defects detected is the responsibility of the County Board of Assistance. In Philadelphia the case-finding function is contracted for from PHMC. In the four suburban counties the County Board of Assistance retains this responsibility. Clearly, this administrative organization is both complex and confusing. More importantly for coordination purposes, however, it vests this responsibility with an administrative contractor while providing no support for this activity within the Department itself.

This placing of coordination responsibility with the administrative contractor has created many problems based largely on a lack of support through planning for the implementation of coordination procedures which is a legitimate role for a Departmental contractor. Historically, then, coordination proceeded on a piecemeal basis as PHMC worked with program entities one by one as they existed in the community. At the same time, programs which had not been

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[16]Personal communication from Nancy Travis, June, 1976.

approached by PHMC attempted to utilize the EPSDT Program. Some were successful, most were not. The staff of those programs which had attempted coordination but were not successful were left with frustration, no health services and nowhere to turn for help. Because the administrative contractor lacked the necessary overview of these related programs' own administrative organization, little was accomplished by way of meaningful coordination. This necessary overview consists of a knowledge of the history of the related program, legislative and regulatory as well as prevailing practice in the area, program components—most specifically requirements for and provision of health services, administrative organization, funding sources, numbers of people served in the area and eligibility requirements for participation. With this information and similar information regarding the EPSDT Program, one can easily identify areas of interface between the two and begin coordination with these obvious areas. Without it, coordination can only occur as a hit or miss activity. This was the state of affairs in the Southeast Region. The administrative contractor lacked time, access to the kind of information needed and even knowledge of what information would be useful to produce uniform and institutionalized coordination. The provision of this information and needed inter-office planning and authority should be the responsibility of the Department and not the contractor. This responsibility had not been acknowledged by the Department or fulfilled by it."[17]

Clearly, although day care-health care coordination is a most desirable program characteristic, it is not necessarily a simple matter for day care programs to develop these linkages. Rather, this sort of coordination takes staff time, persistence and knowledge. Day care investment in this kind of coordination should be reflected as a valid program cost. With the exception of Massachusetts, however, which uses a rate-setting system developed in the Abt functional budget model, we know of no state which recognizes day care linkage with the health system as an actual identifiable program cost.

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[17]Anne Shenberger, "Coordination of EPSDT With Related Programs in Pennsylvania: History and Analysis", (xeroxed), Department of Public Welfare, Southeast Region, July 27, 1976, pp. 3-4.

SECTION V

OUR CONCLUSIONS—AND SOME OPTIONS

Based on the information presented about risks to health and safety of children, program characteristics that control for risks and current day care practices relevant to health and safety we have reached the following conclusions:

(1) Children are and have been at risk in day care. It is not safe to assume that these children are not also equally at risk in their home environments. Fire and sanitation hazards, inadequate emergency preparedness, or the presence of hazards such as lead paint are not characteristics unique to day care. Homes also present many hazards for young children—especially when they are not competently supervised during the absence of parents.

(2) The Federal Government is currently paying to place children at risk. We agree with Gwen Morgan's comment that:

> "We don't know whether children are equally at risk, more at risk, or less at risk in their home environments. But either way the federal government is currently paying to place children at risk. The government pays to place children in day care and it also pays for the children to be cared for at home under the AFDC Program. We have no evidence whether the risk is greater in any of the following categories:" [1]

Federally Subsidized Day Care	Private Day Care
AFDC Federally Subsidized Home Care	Private Families

[1] Personal communication from Gwen Morgan, June, 1976. (chart included).

Although we don't know which situation exposes a child to more risk, we do know that day care is needed and that some extremely hazardous conditions have been found in day care (see Section IV—Current Practices). Ironically, some of the conditions documented in the previous section would constitute evidence of child neglect, under the definition being developed by HEW's National Center for Child Abuse and Neglect. And there have been cases of actual abuse reported at day care sites. Recently, for example, the New York Times reported that a five year old girl was raped at a day care center in the East New York section of Brooklyn. Although the Times did not say whether the young man who allegedly assaulted the child was on the staff or just happened to get into the center, clearly the parents, who are suing the City for negligence in a $5 million lawsuit, felt that the child was underprotected.[2]

By allowing these sorts of conditions to exist in federally subsidized day care, the federal government finds itself in the position of furnishing millions of dollars for treatment of child abuse and neglect while at the same time it pays out federal dollars for the maintenance of hazards that endanger the safety and well-being of children.

(3) The federal government is paying double in other ways, too. Double payments would occur when the federal government pays for services which permit hazards to safety (e.g., broken glass in day care) and then through Medicaid, pays for treatment of the child who has sustained severe lacerations from falls on that broken glass. The population eligible for federally funded day care is not identical with the population eligible for EPSDT and Medicaid—but there are substantial overlaps. Thus, what happens in one

[2]The New York Times, Saturday, July 24, 1976.

channel of federal services will impact on the other channel. Exposure to the hazards documented above would also probably result in "double payment" through the federal lead poisoning treatment programs, dental treatment programs, mental retardation programs and for possible institutionalization.

(4) The federal government is abdicating its responsibility to protect the general public. In this way, it is exposing itself to the kind of political outrage now being expressed over nursing home conditions—and possibly to lawsuit. Parents of a child who died in a day care fire in Kansas are suing the State for failing to adequately protect their child.[3] Probably, it would take "only" one fire in which several babies were killed in a federally-funded day care setting to trigger public sentiment against Congress and HEW. So, it is not only children who are "at risk", the federal government is also "at risk".

We see, at present, three options for the federal government to choose with regard to health and safety in federally funded day care:

Option I—The federal government can provide day care funds to the states without any standards on health and safety-related requirements attached.

Option II-The federal government can maintain the current status of essentially federal reliance on local and state health and safety requirements, with the few rather vague requirements for "health services" specified as they are now in the 1968 FIDCR.

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[3] Personal communication from Gwen Morgan, June, 1976

Option III—The federal government can rewrite the 1968 Requirements to reflect a more precise federal control of health and safety risks in federally funded day care.

Our View of the Options

Option I—No Standards

We are opposed to this position.

First, in choosing an option like this, the federal government would be abandoning responsibility that it has fulfilled in human services for at least the last four decades, that of promoter of quality and of equality of opportunity. The inhibiting factor in the accessibility of day care services actively promoting the health and safety of young children is insufficient funding—not standards. Secondly, the federal government has currently in place many different sets of standards which protect adults from hazards or exploitation in the work environment—e.g., the minimum wage law, Occupational Safety and Health Administration regulations and regulations governing the provision of care in nursing homes. It would certainly be argued that children need and deserve protection from hazards at least as much as adults. We acknowledge the imperfection of the present regulatory processes in many areas, but we do not feel that those imperfections call for the abandonment of federal regulation.

In support of consumers and providers on whom many of the regulations would be imposed, we note that evidence presented in earlier sections demonstrates a great deal of provider and consumer support for the regulation of health and safety in day care.

Option II—Maintain Status Quo of Present FIDCR

We are opposed to this position.

Because the current FIDCR relies so heavily on state and local regulations, this option presupposes that the current state and local codes as they appear on the books and as they are put into practice are adequate for protecting children from harm. However, the evidence presented in the previous section on Current Practices clearly shows that both the regulations themselves and the inspection process are not adequate. Furthermore, the fact that the federal government relies so heavily on these state and local codes presumes that their content is known and has been evaluated for their capacity to protect young children in day care. However, this not the case. In fact, because the federal government doesn't know what the contents of those codes are, it has relied on an unknown for the minimization of risks to health and safety in day care.

Although there are some specific federal requirements related to health and safety at present, they are vague and unenforceable. Clearly, the status quo is not acceptable.

Option III—Adoption of Specific Federal Codes as Fiscal Requirements

We support this option.

We propose that the federal government accept responsibility for specifying as a condition for funding the kinds of health and safety conditions that must exist in day care programs seeking federal monies. Requirements related to rate-setting and monitoring would be included. Further, we propose that these requirements be developed as part of a standard-setting process that includes involvement by interested parties, closer coordination of monitoring at the state level and adequate federal funding.

Secondly, we propose that the federal government accept responsibility for leadership in establishing uniform training, research, parent and provider informational services.

These two facets of federal action form the basis for our recommendations about (1) standard-setting process; (2) specific regulations; and (3) development of training, technical assistance and informational services.

We believe that this option would have the greatest impact on minimizing risks to health and safety in federally-funded day care. In addition, it could point the way towards removal of the barriers to growth of day care supply.

SECTION VI

OUR RECOMMENDATIONS

Federal Regulation of Health and Safety in Day Care: The Need for Immediate Federal Standards

The data presented in previous sections documents the fact that children in federally-funded day care are inadequately protected from risks of accidental injury and death, infectious disease, quiet conditions such as vitamin and iron deficiency, anemia, lead absorption, dental disease and other threats to healthy development. Underprotection derives from inadequacy of state regulation, due to deficiencies, gaps or inconsistencies in codes, and ineffective monitoring and inadequate information in the hands of all concerned.

Consequently, we are making both immediate and long-term recommendations in the areas of regulation, training, informational services and research.

Regulation

The following represent regulation statements that should be incorporated into the current Federal Interagency Day Care Requirements in order to protect children in federally funded day care from risks to health and safety. We urge that these statements be adopted only after (1) the pattern of multi-disciplinary review which we have begun is continued and broadened; (2) public education materials explaining health and safety risks to young children and their relationship to day care regulation have been widely distributed; (3) at least a six month exposure to public review and comment has been completed; and (4) materials describing a variety of low-cost alternative but uniformly protective methods of compliance with these regulations have been developed for as many of the regulation statements as possible.

We have tried to develop regulation statements that are clear, enforceable, minimal and related to proven risks.[1] As such, we believe they are an improvement over the current Federal Interagency Day Care Requirements for health and safety. Within the limited scope of this project, we were not able to search for studies that justify the effectiveness of those regulation statements which might be in need of justification. (Some statements, such as removal of broken glass, screening or preventing second-story openable windows from opening too far, etc. can be justified on the basis of common sense. A comprehensive search for effectiveness studies must be conducted as part of another research effort.

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[1] We are indebted to a master's thesis prepared by Ms. Karen Oxidine for East Tennessee State University, Johnson City, Tennessee entitled "A Model Day Care Center Licensing Act and Environmental Regulations", August, 1975, as well as the 1976 Pennsylvania State Licensing Regulations and the 1976 Massachusetts Family Day Care Regulations.

Specific Regulation Statements

Day care programs shall be required to meet the following regulations:

Transportation

1. State agencies shall be responsible for providing funding, training, and information for currently marketed, suitable equipment and services for transportation of children to day care facilities.

2. A sufficient number of adults shall be available to assure the safety of the children while enroute. School bus safety regulations shall apply to transport of older children.

   a. For children ages 3 through 6 an attendant in addition to the driver shall be present if more than 6 children are in one vehicle; two attendants shall be present for more than 20 children; and three attendants for more than 40 children.

   b. For children ages 0 through 35 months, an attendant in addition to the driver shall be present if more than 2 children are present in one vehicle; two attendants shall be present if 7 or more children are present in one vehicle; and a supervision ratio of one adult (including driver) to three children shall be maintained for larger numbers. No child shall be left unattended in a vehicle.

3. A suitable infant restraint or seat belt which meets federal standards of construction and installation shall be available for each child using a vehicle not covered by existing pupil safety regulations. The restraint shall be used whenver the vehicle is in motion.

4. Children shall be covered by accident insurance which will be sufficient to cover costs of treatment for any accident suffered during transportation to and from the day care facility, or while on activities such as field trips, nature walks, and other activities sponsored by the day care program.

5. Vehicles used in transportation of children shall be equipped so that the doors cannot be easily opened by the children while the vehicle is in motion.

6. All drivers shall be required to receive instructions in child passanger safety precautions, including use of safety restraints, handling of emergency situations and supervision responsibilities.

7. Children shall be instructed in safe transportation conduct as appropriate for their age and stage of development.

8. Vehicles used to transport day care children, regardless of type or purpose of use shall be in compliance with all applicable federal, state, and local requirements for the type of vehicle.

9. All day care programs shall notify local traffic safety authorities about the location of the day care site so that appropriate traffic safety plans can be considered (e.g., child at play signs, stop signs, cross-walks and other through traffic diversion techniques).

10. Safe pedestrian crossways, pick-up and drop-off points and bike routes where appropriate, in the vicinity of the child day care program shall be determined and communicated to staff and parents.

Fire and Burns and Ingestions

1. All day care programs shall be required to comply with the current (1973) Child Life Safety Code of the National Fire Protection Association.

2. Hot water temperature shall not exceed 110° Fahrenheit at outlets accessible to children.

3. Heaters, hot water pipes and other sources of heat exceeding 110° shall be guarded or insulated so that children do not come into direct contact with them.

4. Day care sites serving children under six years of age shall be free of lead in child use areas.

5. Plastic bags and objects with a diameter less than one inch or objects with removable parts that have a diameter of less than one inch shall not be accessible to children under 2 years of age or to children who are still mouthing objects.

6. There shall be no toxic materials accessible to children. Cleaning agents, cleaning equipment and other hazardous chemicals shall be stored in a space designated for this purpose alone and shall be inaccessible to children.

   Pesticides shall not be used in the physical presence of children. Any used shall be of low toxicity rating.

   All poisonous compounds including pesticides and those used in rodent control shall be clearly labeled as poisons and shall be securely stored in a place locked, inaccessible to children and in a separate shelf, and not stored above food, drink and utensils.

7. All medications shall be labeled, stored in a space designated for this purpose alone and shall be inaccessible to children. Only original prescription bottles with safety lock closures shall be accepted by the day care program for administration, only to the child named on the prescription, according to the dose, frequency and care and storage instructions written on the label—or accompanying written instructions from a physician. These instructions shall include the prescription number, name of medication, date filled, child's name, physician's name and directions for dosage. When no longer needed, medications shall be returned to parents or guardians, or destroyed.

8. All of the above toxic materials shall be stored in original containers only.

9. No poisonous plants shall be allowed on the premises.

Falls

1. In programs caring for children under the age of three, stairs with more than three steps shall have safety gates or landings placed to prevent falls of more than three steps. Safety gates shall be able to be pushed to the side or opened in the direction of exits.

2. Stairways shall be illuminated by natural or artificial light and shall have right hand descending handrails.

3. Openable windows abo the ground floor shallbe adjusted in such a way that they cannot be opened more than six inches or screened to prevent accidental egress.

4. Concrete or asphalt may be used in outdoor play areas for specific purposes but grass, chart, bark chips or artificial turf shall be the most desirable surface. Concrete and/or asphalt shall not be used under climbing structures or swings.

5. There shall be no open drainage ditches, wells or holes into which children could fall.

6. Non-walking children shall not be unattended on beds or other elevated surfaces which do not have barriers to prevent falls.

7. If used, bunk beds shall have guard rails and fixed ladders. Metal bed frames shall not protrude. If used, bunk beds shall be restricted to sleeping purposes only. Upper bunks shall not be used by children under 9 years.

8. When new equipment is being purchased, only cribs, high chairs and baby walkers marked with the label specifying that the product meets the U.S. Consumer Product Safety Commission and/or F-15 ASTM safety standards shall be purchased.

9. Old infant equipment shall be modified according to the recommendations of the U.S. Consumer Product Safety Commission to prevent suffocation, strangulation and hazardous use.

Drowning

1. When a swimming or wading pool is provided it shall meet the requirements of the local health department. Non-circulating pools shall not be permitted.

2. A person competent in resuscitation shall be in attendance at all times when the pool is in use. Children shall be attended at all times.

3. Swimming pools shall be fenced and locked in accordance with accepted safety practice to prevent accidental or chance access by children or others. Portable wading pools shall be drained and upended when not in use.

4. Safety rules for the use of pools shall be posted in a conspicuous location and shall be reviewed at regular intervals by the staff.

General Injury

1. Day care programs shall perform routine environmental safety checks not less than monthly to detect and remove hazardous conditions such as nails and tacks, sharp, protruding bolts, broken glass and other sharp objects, poisonous substances and structural defects. A dated list of hazards noted and hazards corrected shall be maintained.

2. State agencies shall provide screening of all prospective staff for child abuse record or history. No person with such a record shall be employed in a child care program.

3. Furniture, equipment and toys shall be sturdy, without sharp or splintered edges, loose parts, or toxic paint. All toys shall present minimal hazards to children.

   a. Outdoor equipment such as swings and slides shall be sufficiently rigid and permanently anchored to the ground.

   b. Day care providers shall be required to contact the U.S. Consumer Product Safety Commission and request information on safety related to all child-oriented products.

4. Clear glass panels in sliding doors, storm doors, and other places shall be clearly marked to avoid accidental impact.

5. Stairs, walkways and porches shall be maintained free from ice and snow.

6. The outdoor play area shall be fenced or have natural barriers such as hedges or stationary walls to restrict children from unsafe areas. The outdoor area shall be so designed that all parts are visible for supervision.

   a. Garden tools and repair equipment shall be kept in locked storage.

Emergency Preparedness

1. Day care programs shall have evidence of a plan for emergencies to include:

   a. Minor and severe injury to an individual.
   b. Fire.
   c. Natural disasters such as flood, tornado, hurricane, blizzard and earthquake.

2. The emergency plan shall include provisions for calm and rapid:

   a. Protection of all children from injury or trauma through evacuation or other means.
   b. Attention to the needs of any injured.
   c. Access to a source of emergency medical care which has been previously notified of the providers intention to use it as a resource.
   d. Notification of parents.
   e. Meeting the needs of the children who are not injured but for whom adequate adult supervision and reassurance is required.

3. Training and technical assistance to establish the emergency plan shall be provided or arranged by the state agency.

4. Plans for evacuation of staff and children shall be practiced at least monthly.

5. All day care programs shall have a listed telephone and shall have posted by the phone the telephone number for police, fire, rescue and poison control services.

6. Day care providers shall maintain a written list detailing where parents can be reached in the event of an emergency.

7. Day care providers shall maintain for each child health information which would be necessary to the management of an emergency such as chronic conditions, allergies, current medications.

8. Provision shall be made for child supervision when a caregiving adult must leave for an emergency.

Management of Injury

1. At least one individual competent in first aid techniques shall be present wherever children are in care (including on trips).

2. First aid supplies suitable to the management of minor injury shall be accessible to caregivers wherever children are in care (including trips).

3. Each day care provider shall have arrangements for transport of a seriously ill or injured child to an emergency medical facility. Such plans shall include escort of the injured or sick child by someone other than the driver of a vehicle. The plan shall name the source of emergency medical service.

4. Plans for managment of injury and other emergencies shall be shown to parents and discussed with them.

5. A written, witnessed consent for transport of the child for emergency medical treatment, signed by the parent or legal guardian, shall be maintained for each child.

Prevent Control and Manage Infectious Disease

1. Providers and children shall be required to wash hands after toileting, before eating and after contact with nasal, fecal and infectious discharges.

2. The temperature of the environment shall be maintained between 65° and 78° Fahrenheit, except that in extremely warm weather, special efforts such as offering more fluid and bathing shall be made to prevent overheating and dehydration. In sudden extremes of cold weather, special efforts such as wearing extra clothing, shall be made to preserve body heat.

3. If windows are present, at least one shall be operable in each room except in centrally air-conditioned and/or ventilated buildings. Provision shall be made for fresh air circulation at all seasons of the year.

4. Clean, washable rest equipment shall be provided for each child. Rest equipment shall be marked with the individual users name and used only by him/her while enrolled in the program. Cots or pads shall be thoroughly cleaned and covers washed at least once a week or more to prevent accumulat: of soil.

5. Rest equipment cots and pads shall be placed apart to provide free air circulation on all sides.

6. Individual towels and soap shall be provided. Single-use, disposable towels shall be preferred. Toilet paper shall be available at all times. All toilet articles such as toothbrushes shall be individually identified and kept in sanitary condition. Extra clothing shall be provided and kept available for young children in case of toilet accidents.

7. An adequate, safe, and potable supply of water shall be used. Where a public supply of satisfactory quantity, quality and pressure is available, connection shall be made thereto and this supply used exclusively. When a satisfactory public water supply is not available, a private water supply may be used if it meets the standards of the local and state health authority and standards set forth by the Public Health Service's Manual of Individual Water Supplies (45).

8. If drinking fountains are provided, they shall be approved jet angle type with an orifice guard above the rim and shall be supplied with adequate water pressure at all times. Only approved water supplies shall be used. If drinking fountains are not available, individual single service cups shall be provided in a sanitary dispenser, and used only once. Drinking fountains shall be separate from toilets.

9. Facilities for the disposal of sewage and other liquid wastes shall be approved by local health authorities.

10. There shall be adequate drainage on the property so that no stagnant pools of water accumulate.

11. The storage, collection, and disposal of solid waste shall be so conducted as to create no health hazard, rodent harborage, insect breeding areas, accident or fire hazards, or air pollution.

    a. All solid waste shall be stored in flytight, watertight, rodent-proof containers which are easily cleanable and which shall be inaccessible to children. Containers shall be provided in sufficient number and capacity to properly store all waste.

    b. Garbage and trash shall not be stored immediately adjacent to the outdoor play area.

    c. Provisions shall be made to prevent containers from being turned over, to minimize spillage and container deterioration, and facilitate cleaning around them.

    d. Solid waste shall be collected at least once a week. If no such municipal service is available, the day care center operator or director shall make arrangements for this service to be provided.

12. All day care facilities shall be maintained free of insects and rodents. Control measures shall be maintained to prevent rodent and insect infestation.

    a. All storage areas must be clean and free from rodent and insect infestation.

    b. Storage areas shall be maintained so as to prevent rodent harborage.

    c. The growth of brush, weeds, and grass shall be controlled to prevent harborage of noxious insects.

    d. Exterior doors and windows used for ventilation shall be screened with not less than sixteen (16) mesh per square inch screening, or have other means of insect exclusion.

13. Cleaning of premises and equipment shall be performed as needed to protect the health of the children and staff.

    a. Major cleaning with toxic substances shall be prohibited while children are present.

    b. Toys, table tops, furniture and other equipment shall be washed when they become contaminated with matter such as food

14. All food shall be from health authority approved sources, and shall be transported, stored and prepared and served in a sanitary manner and approv by regular inspections from local health authorities.

15. In facilities serving more than 7 children, food preparation, storage, and handling areas shall be separated from rooms used by children and shall not be used as a passageway by children to travel from one area to another. Children shall not be allowed in these areas except for a supervised learning experience.

16. Surfaces coming into contact with food or drink shall be easily cleanable and in good repair, and shall not be made of a toxic material.

17. Kitchen facilities shall be maintained in a sanitary condition, free from dust, flies, vermin, rodents, overhead leakage, condensation, sewage backflow, residual pesticides and other contamination.

18. No sewage or drainage pipes shall be located over food preparation, storage or serving areas.

19. All readily perishable or readily contaminated food or drink shall be refrigerated at or below 45° Fahrenheit except when being prepared or served. All readily perishable or readily contaminated hot foods shall be kept at 140° or above. Frozen foods shall be stored at 0° or below. All readily perishable food shall not be kept at room temperature for more than two hours while being prepared or served. Fresh fruits and vegetables shall be thoroughly washed before use.

20. A mechanical dishwasher is recommended with a rinse cycle of 180°F. This shall be installed and operated according to the manufacturer's recommendations. If a dishwasher is not available, three compartments shall be required for the dishwashing, rinsing and sanitizing of dishes and utensils. Dishes shall be washed in soapy, hot water (120°F) rinsed in hot clean water and immersed for two minutes in an approved sanitizing rinse. Handwashed dishes shall be air dried.

21. All utensils and equipment shall be stored in a clean, dry place, free from insects, splash, dust, and other contamination; and shall be handled in such a manner as to prevent contamination.

    a. All containers and utensils shall be stored off the floor. Dishes and utensils shall be stored in a closed storage space. Cupboards shall be clean.

b. Utensils shall be covered or inverted at all times when not in use.

c. Containers and utensils shall not be handled by the surfaces which come in contact with food or drink.

d. Paper cups, plates, straws, spoons, forks and other single service containers and utensils shall be purchased in sanitary cartons and stored in a clean and dry place until use. After removal from the cartons, these articles shall be placed in dispensers or so stored that the food contact surfaces are not exposed to sources of contamination; single service utensils shall be used only once.

e. All machinery and equipment used in connection with the operation of the kitchen shall be so constructed and arranged as to be easily cleanable, and shall be kept in good repair.

f. Enamelware and cracked or chipped china shall not be used.

g. Food handling practices shall be reviewed by a sanitarian or other recognized expert in safe food handling practices no less than annually.

h. All foods shall be stored in original containers or if removed from the original container stored in plainly labeled and dated containers.

i. All foods exposed to sewage and other drainage, to vermin or insects, or to depredation by any animal, and food or drink containing insects, hair or other filth shall be promptly disposed of. Swelled, rusty or leaky canned food or drink shall be promptly disposed of.

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22. Pet water turtles, hamsters and birds are prohibited from day care facilities unless they are examined and certified free of disease by a veterinarian.

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23. Domestic animals shall not be permitted in rooms where food or drink is prepared or served except in family day care where such animals shall be excluded when food preparation and service activities are taking place. The operator shall be responsible for the behavior of pets or animals allowed on the premises. All dogs and cats on the premises shall be immunized against rabies and checked for parasites by animal specialists.

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24. In facilities serving 7 or more children, laundry facilities, if provided, will be separate from food preparation areas and toilet rooms.

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25. Dirty linen storage will be separate from clean linen, food and other supplies.

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26. Fecally soiled laundry shall not be washed by the day care provider using home laundry equipment. Soiled and clean laundry areas shall be kept separated and so designated.

27. All members of the staff of the day care facility shall have a health examination within three months prior to employment and annually thereafter. The report, dated and signed by a licensed physician, shall be on file in the facility.

    a. Within three months prior to employment each staff member shall have a tuberculin test or chest x-ray. Such test shall be repeated bi-annually.

    b. There shall be an annual review and report of the health status of each staff member certified by a licensed physician to include presence or absence of chronic disease, respiratory or skin infection, use of medication and immunity to infections of childhood.

28. Staff members shall be excluded from the day care facility when ill. Persons with contagious diseases such as mononucleosis and streptococcal and staphylococcal infections shall have a physician's release before returning to work.

    a. No person with a health history of typhoid, paratyphoid, dysentary or other serious diarreal diseases shall reside or work in a day care facility until it is definitely determined by appropriate tests that such person is not a carrier of these diseases.

29. Volunteers, persons who agree to give regular or occasional time to work with children in a day care facility shall be subject to the same health regulations as are applicable to paid staff members.

Infection And The Quiet Conditions

1. Child Health Assessment--Each child shall have a complete health assessment within six months prior to enrollment or within two months following enrollment. Arrangements shall be made by parents with the assistance of the day care program as necessary. The health assessment shall include, but is not limited to:

   a. Review of previous health history (including developmental, and growth assessments and identification of high risk infants).

   b. Physical examination.

   c. Review of immunization status and initiation of age appropriate immunization where indicated to conform with the recommendations of the United States Public Health Service or the American Academy of Pediatrics.

   d. Provision of age appropriate screening tests and preventive services.

   e. Establishment of an age appropriate plan for continuing health supervision.

      1. Prior to scheduled routine health assessments the caregivers shall express any concerns about the child in writing to be conveyed to the health care provider by the parent or with the parent's consent. A request shall be made to the parent to convey relevant health information from the health care provider to the child care program on an on-going basis.

   f. Statement of recommendations for follow-up and/or treatment of any identified health problems.

   g. Statement of the child's ability to participate in a child care program. Any restrictions or special care such as in activity, diet, environmental contact or use of medications shall be noted.

2. A daily health check consisting of an individual greeting of each child and some method of exchange of information about the child's health and behavior between the child's home and the day care staff shall be performed.

3. Health records shall be maintained by the day care program which document that the child has received age appropriate health services, that abnormalities have been professionally evaluated and that a care and follow-up health plan has been established for each child.

4. Providers shall be knowledgeable about the initial signs and symptoms of disease in children and shall observe the children for presence of these signs.

5. Parents shall be notified as soon as possible when a child becomes ill while attending the program, within two hours for illness requiring adjustment of the child's activities and by the end of the day for all other events.

6. The facility shall have a written health policy, developed by providers, parents and medical consultants, describing what will be done about participation of children who have communicable disease in the program, how health and safety concerns will be included in operational rules, on staff health, exclusions, sanitation practices, emergency preparedness, safety surveillance, medical services, medication administration, dental hygiene and other health routines.

7. If ill children will be participating in the day care program, provision shallbe made for rest as needed during the day and for other routines deemed necessary by a health care source for appropriate care of illness.

8. Children who are in the day care facility for four hours or more shall be served food which will supply at least one-third of the National Research Council's Recommended Dietary Allowances. Children in the day care program for eight hours shall be served food which supplies at least between one-half to two-thirds of the Recommended Dietary Allowances. Children receiving care for more than eight hours shall be served food which supplies at least two-thirds of the Recommended Dietary Allowances.

9. Providers shall be required to show evidence of planning and serving meals and snacks which contain iron rich foods daily.

10. Providers serving children more than four hours daily, five days a week shall be required to show evidence of planning and serving at least three meals and three snacks a week that offer fresh fruits and vegetables.

11. Infants under the age of three months shall be held while being fed. Day care providers shall help and encourage those mothers who want to breastfeed infants.

12. Iron fortified formula shall be fed to all infants under the age of one year except for breast milk and children requiring specially prescribed formulas. Solid foods shall be added to infant diets as tolerated, planned and desired by parents planned in conjunction with the child's health provider.

13. All children over the age of eighteen months shall brush their teeth daily in the day care facility.

14. Providers shall be required to show evidence of efforts to minimize the carbohydrate and refined sugar content of the children's diet while in the facility.

15. Children who do not receive fluoride via community fluoridated water shall be assured of receipt of fluoride supplements provided by their parents or by the day care facility.

General

1. Providers shall be required to maintain a posted list of the names of the persons whom the parents have authorized to take children home from the day care facility.

2. Providers shall be required to show evidence of having consulted with parents about:

   a. the child's overall health condition;

   b. the parent's preference for foods to be offered the child;

   c. the parent's preference for where the child may go outside the day care facility (school-age children);

   d. the procedures and policies followed by the day care program in order to minimize risks of injury, infection and the "quiet conditions".

3. Providers shall establish, maintain and have at least quarterly review of records of accidental injuries occuring to children in day care-related activities.

4. Providers shall institute a routine safety surveillance procedure to include inspection of the day care facility and outdoor use areas at least monthly.

5. There shall be at least one person at each day care facility whose duties shall include assuring that health and safety concerns are addressed by the day care program.

6. Children shall never be left unsupervised by sight or sound except for school-age children whose whereabouts must be known at all times.

Climate for Implementation of These Regulations

We firmly believe that these regulations will be worthless unless they are implemented in a climate of sufficient funding to meet operating and facility compliance costs, supportive assistance to the states and supportive and effective monitoring of providers which is focused on helping to make compliance possible rather than concentraing on finding and documenting violations.

In addition, we would like to point out the special nature of family day care. Although we have attempted to recommend regulations that can be applied to both family and group care, we are highly aware that the entire concept of the regulation of family day care needs to be carefully considered at this juncture in our history with much creative thought given to the most effective alternatives of regulation.[1] However, we do not support the notion that the proven major risks to the health and safety of children can simply be perpetuated in federal funding of family day care. One of the most interesting comments on our Interim Report was received from the Licensed Family Day Care Association of New York State.[2] Some of their comments, carefully collected from representative providers in different parts of the state are offered below:

> "Training--This should be a MANDATED REQUIREMENT with the Government outlining the courses and with the State issuing a certificate when a provider shows proof of having covered the courses at the local level.

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[1] Gwen Morgan, Alternatives in the Regulation of Family Day Care, Day Care and Child Development Council, 1974.

[2] Personal communication with Patricia Cox, Licensed Family Day Care Association of New York State, Inc., July, 1976.

> We cannot agree totally with page 59 and 60. (Reeducation of parents to make wise choices of care site.) All too often we find the caseworker makes the decision as to where the child should go and the parent is given no choice at all.
>
> We are also of the opinion that if a provider is going to take in children, and be paid, then traditions like "privacy of the home" no longer apply and the provider should become receptive to having inspections and be prepared to learn why precautions and knowledge are a necessary part of her job, for her protection as well as for the childs.
>
> We are in total agreement with (your) POSSIBLE RECOMMENDATIONS and are of the opinion that the Federal Government must take more responsibility for the future and safety of children, and must set precise and definite regulations to avoid the time that is wasted now when hasseling with local and state interpretations."

We urge that any public review and comment period of federally proposed regulations give special attention to encouraging comments from family day care providers.

Federal Regulation: Our Long-Term Objectives

In the early 1970's, as an outcome of the HEW effort to develop Model Licensing Codes, a group of day care providers, representatives of the Office of Child Development, and members of the National Fire Protection Association Safety to Life Committee came together and developed the Child Life Safety Code (CLSC).[3] This code consists of very specific requirements designed to minimize the risk of death or injury by fire in both group and family day care. Since it was designed specifically for day care and included some alternative ways in which fire prevention could be achieved, the Child Life Safety Code was hailed as an improved achievement over the existing fire codes that were

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[3]Personal communication from Richard Stevens, Assistant Vice President for Standards, National Fire Protection Association, June, 1976.

usually applied to day care at that time. Since then, states have begun to adopt the Child Life Safety Code as part of their licensing requirements,[4] and to pass legislation which gives the CLSC precendence over local codes.

In addition to adopting the basic Child Life Safety Code, the State of Vermont has also developed a sanitation code specific to day care. Now there is at least one sanitarian and one fire marshall knowledgeable about day care in the State of Vermont.[5] We believe this is a much more workable system than the confusion documented in the HEW Day Care Licensing Study. These two objectives—the development of codes specific to day care and the staffing of monitoring offices with specialists knowledgeable about risk-prevention in day care—are our long-term objectives. As such, they underlie the following recommendations for a standard-setting process.

We recommend that the Federal Government:

1. Convene at least two task forces to develop uniform National Codes similar to the Child Life Safety Code, as follows:

   a. A Child Care Sanitation Code which would contain requirements specific to the reduction of infection risks in day care.

   b. A Child Care Health and Safety Code which would contain requirements specific to routine health and safety practices not directly related to either fire-prevention or the control of infectious disease (e.g., accident prevention, management of accidental injury, provision of nourishing diet, detection of lead paint, etc.).

2. Incorporate parent, provider, state agency and appropriate specialists to participate in the development of these codes.

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[4]Personal communication from Gwen Morgan, June, 1976.

[5]Personal communication from Patricia Jewett, July, 1976.

3. Substantiate, wherever possible, the reasons why compliance with these requirements would reduce risks.

4. Offer, wherever possible, alternative methods of compliance with the requirements.

5. Insure a public review process for the codes in draft stages.

We believe that the Guides for Day Care Licensing, published by the Office of Child Development[6] would serve as an important reference point for the process just recommended. There is no need to discard the valuable effort already put forth by HEW to help minimize risks to children. That effort can lay the foundation for a newer, more effective one.

Further, we recommend that:

1. The Federal Government require the states to adopt these codes as prerequisites for all federally funded day care in the state and preferably for all day care in the state whether federally funded or not. States should have the option of adopting these codes as their basic licensing requirements, with incentives for adopting them, such as shared monitoring costs.

OR

Individual states may develop or submit their own fire, sanitation and health and safety codes and accompanying interpretative material as acceptable substitutes for the federal fiscal requirement codes. However, these codes must meet some basic criteria:

a. They should have been developed for day care.

b. Their standards must be consistent with the federal codes.

The Federal Government can then choose to accept or reject these codes as acceptable standards for federal funding prerequisites.

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[6]Guides for Day Care Licensing, DHEW Publication No. (OCD) 73-1033.

2. The Federal Government must develop compliance instruments and guides that provide useful models for interpretation of these codes by various states.

To insure adequate compliance with these specific standards, we recommend that:

1. Each state design with state agency/provider/consumer participation and implement (with HEW approval) a state monitoring system that will ensure compliance with these standards in federally funded day care by consolidating inspections rather than by addition of another layer of inspections.

2. Federal Government design and implement a federal performance monitoring system based on periodic sampling of federally funded day care (done regionally). Federal performance monitoring should consist of on-site spot checks, rotating on a random sample basis throughout the state in addition to monitoring state records.

3. The Federal Government require states to reimburse programs based on the cost of care with rate-setting done on a rational, public basis.

4. That the Federal Government require states to distribute information about other major federal and state health services to children such as EPSDT, child abuse and neglect, the USDA food programs, lead poisoning prevention and immunization programs provided by state departments of health.

5. The Federal Government require providers to be aware of and show evidence of coordination with these other major health services.

6. The Federal Government require states to reimburse providers for the cost of staff time involved in such coordination efforts, again using a rational and open system to determine such costs.

7. Each state develop, with state agency/provider/parent participation a procedure for receiving and responding to grievances and complaints from providers and parents.

Training

In order to promote the most effective use of the regulation system described above, as well as foster other nonregulatory methods of minimizing risks to health and safety in day care, we recommend that:

1. The Federal Government sponsor uniform training for federal and state administering and regulating agency personnel in the measurement of health and safety risks in day care, first in relationship to specific statements adopted into the Federal Interagency Day Care Requirements and then in relationship to the Child Care Sanitation and Health and Safety Codes.

2. The Federal Government require states to provide at least annually, training programs in measurement of compliance with health and safety standards for state regulatory personnel and to provide financial and professional advancement incentives for the completion of such training.

3. The Federal Government sponsor an annual national institute and periodic regional institutes in regulation of early childhood programs where issues of concern to the field can be discussed and solutions proposed.

4. The Federal Government require that state agency develop and offer state-wide training courses in health and safety, particularly in accident prevention, reduction of infectious disease, nutrition, emergency preparedness and child health screening for day care providers.[7]

5. The Federal Government require federally funded facilities to have present at all times at least one caregiver that has completed these health and safety courses or the equivalent thereof.

6. The Federal Government develop a nationally televised correspondence course on the basics of health and safety in child care and require all providers in federally funded day care to show evidence of having participated in at least one semester of the TV course.

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[7]These are areas shown by HAT data and by the Texas Day Care Study to be high priority training items.

7. Federal Government encourage the American Red Cross to revise their first aid course to be more attuned to young children and their caregivers—i.e., develop a "Child Care First Aid Course"—require (eventually) all federally funded providers to complete the course or its equivalent—competency tested and certified.

8. Federal Government sponsor in other parts of the country Health Advocacy Training/consultation programs such as the ones run by Dr. Susan Aronson at the Medical College of Pennsylvania in Philadelphia and Ms. Gladys Valdiveso at Martin Luther King Jr. Health Center in Bronx, New York.

9. The Federal Government periodically evaluate the effectiveness of these training programs by assessing the improved compliance of the participating programs with health and safety regulations.

Informational Services

In order to insure that providers have all the resources they need to comply with health and safety standards and that parents have the necessary information to become knowledgeable about health and safety standards and about available child care options in their community, we recommend that:

1. The Federal Government develop or arrange for development of training manuals, especially in the areas of accident prevention, infectious disease control, nutrition, emergency preparedness and basics of well-child care screening in order to facilitate development of state level training courses.

2. The Federal Government provide incentives for states to develop centralized registers of health and nutritional consultants who would be willing and able to advise providers about the health and nutritional components of their day care programs.

3. The Federal Government (OCD) sponsor a National Child Care Finance Information Center—which will assist day care providers in identifying and maximizing available funds, especially health resources as well as in sharing cost-saving ideas.

4. The Federal Government place high priority on funding of child care information—referral resource centers organized at local community levels by local community residents which help local providers identify and make use of funds available for health and nutritional services and which help parents locate the best possible quality in child care arrangements.

5. The Federal Government develop materials for day care providers that explain in readable language what is expected of providers in federally funded day care and what research has shown may happen to children if these standards are not upheld. These materials should be disseminated through a variety of sources: state agencies, national child care organizations, information and referral networks, training institutions, etc.

6. The Federal Government develop public education programs for parents that describe what consumers can expect from federally funded day care and why, as well as procedures that parents can take to lodge complaints, report violations, etc.

Research

At present, insufficient knowledge generates obstacles to effective regulation of health and safety in day care. Much more should be known about actual patterns of practice, about risks as they occur in day care and about effective, low cost countermeasures. As a result of our research, we recommend that the Federal Government sponsor studies of:

1. Actual accident rates in day care.

2. The transmission patterns and control of the common childhood viruses (rhinovirus, parainfluenza III and shigella) in day care.

3. Current nutrition practices in day care and their impact on child health, with particular focus on the use of processed foods in day care.

The above research efforts might be channeled through the National Institutes of Health.

4. The relationship of staff mental health to health and safety issues in day care.

This research effort might be sponsored by the National Institute of Mental Health.

5. A variety of coordination efforts among day care sites and EPSDT.

The Health Services Administration of HEW might be an appropriate sponsor here.

6. Current health and safety knowledge levels, attitudes and practices among day care providers nationally, with systematic variation in some selected sites in order to observe the effects of different kinds of health knowledge and health practices on children.

7. Thorough search for existing studies that demonstrate the effectiveness of recommended health and safety standards, as a basis for regulation and for the preparation of public education materials.

The Social and Rehabilitation Services Division of HEW or the Office of Child Development might be able to sponsor such research.

8. Safety devices which would minimize risks for young children at low-cost--e.g., inexpensive, effective automobile restraints for children under 40 lbs., methods for removing lead paint, improving fire-resistiveness of structures, low-hazard playground equipment and playground surfacing, as well as effectiveness of safety training.

The Consumer Product Safety Commission may know who could be an appropriate sponsor of these safety-related studies.

SECTION VII

IMPACT

We have been asked to assess the impact of our recommendations on both costs and the availability of day care supply.

With regard to costs, it must be kept in mind that there are three types of costs involved in reducing risks to health and safety in day care: (1) major physical structure renovation in some programs; (2) the staff-child ratio required in the Child Life Safety Code; and (3) costs involved in providing monitoring, training, coordination with existing health resources and direct health services for children.

The costs of physical renovation and the staff-child ratios of the CLSC are simply not known on a national scale. To our knowledge, there has been no related research.

Analysis of the Health Advocacy Training Project data on costs allows us to say that cost of completing one comprehensive health and safety assessment, complete with computerization of the information collected but separate from basic administrative and supportive costs amounts to $80.23 per day care site serving approximately 40 children. Using the HAT model, the cost of training one day care provider, including preparation and teaching time for two trainers with 10 providers per group and two simultaneous groups is $79.94 per site of 40 children, again separate from administrative or supportive costs. Approximately 30% more must be added to each of the two costs cited for development costs—the costs of developing the instruments which were needed to provide monitoring, (since data was collected spearately in the HAT Project), and another to develop the training materials. This would bring the combined costs of monitoring and training to about $208 per day care site of 40 children ($104 for each activity). However, since both assessment instruments and training materials will be replicable outcomes of the HAT Project, the development costs might be incurred at a

percentage in programs which chose to adopt the HAT materials. However, for the sake of a generous estimate, we can conclude that the unit cost (without) administrative or supportive costs) of comprehensive annual assessment for health and safety in a day care program serving 40 children would be $2.60 per child per year. The unit cost of training a Health Advocate who would take responsibility for promoting health and safety within the site would also be (for a site serving 40 children) $2.60 per child per year if the HAT model is used.

Within the HAT Project, medical college administrative costs had to be added onto the costs of developing and operating assessment and training activities. Costs of office space, travel, supplies, secretarial personnel amounted to $122.31 per assessment and an equal amount for training. This would bring the total cost of the HAT assessment component to approximately $226 per 40 child site and the total cost of the HAT training component to approximately the same. With these administrative costs added on a per child basis, the cost of assessment would be $5.65 and the cost of training is also $5.65 per child per year.

The combined cost of training and assessment would be $11.30 per child per year—at a generous estimate, since not all offices operating monitoring and training activities would have the special administrative costs incurred at a medical college.

These findings are summarized on page 199.

Fort For Forty-Child Facility

HAT Assessment

Data Collection and Processing	$80.23
Development Costs @ 30%	24.00
Administrative, Space, Secretarial and Supportive Costs	122.31
	$226.54 or $5.65/child/year

HAT Training

Training Preparation and Delivery	$79.94
Development @ 30%	24.00
Administrative, Space, Secretarial and Supportive Costs	122.31
	$226.24 or $5.65/child/year

Total Costs Per Child Per Year = $11.30

We ask the reader to note the impact that these minimal costs have had in improving the health and safety in the day care sites studied in Southeastern Pennsylvania (see page 109).

On-Going Health Advocacy and Consultation

Cost data for maintenance of risk-reducing health and safety practices in day care is also available through the HAT Project. The average Health Advocate from a program with 40 children reports using a minimum of about 2 hours a week in health advocacy activities including coordination of health services. If we paid the day care worker a decent salary (which we should), for example $7.50 per hour, we would incur a cost of $15 per week ($70 per year) for health advocacy for 40 children. The use of a health consultant @ $30 per hour for 1 1/2 hours a month would mean a yearly cost of $540. The combined annual cost of a Health Advocate and a health consultant would be $1,290 for a 40 child facility or $32.25 per child per year.

These figures seem comparable with other sources. The mean Title XX normal program annual per child health related expenditures ($31.98 for medical personnel and consultants plus $2.22 for dental personnel and consultants plus $1.61 for medical supplies and equipment plus $2.91 for transportation to health services, equals $38.72) also compares favorably with .15¢ per day = $39 per year quoted to us by Joseph Duffy of the Massachusetts Rate Setting Commission.[1]

Direct Services

Data has been made available to us regarding the EPSDT costs for the State of Pennsylvania. Analysis of EPSDT screening in that state revealed that approximately 93 minutes per child was necessary for the entire EPSDT screening process, excluding the time the physician spent in actually performing the screening tests.

The average cost in 62 Pennsylvania counties including outreach, scheduling of screening appointments, escort if necessary and payment for one follow-up treatment visit is $50 per child.[2] Depending on the frequency of screening required (determined by age) this would bring the total cost of providing screening for the "quiet conditions", along with initial follow-up to between $50 and $150 per child per year (using a maximum of three visits for the first year).

Data obtained from Vernon Weckworth's last Quarterly Report on the Title V Project national reports supported the risk data we had previously collected and indicated that the national per child cost of comprehensive medical

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[1]Personal communication from Joseph Duffy, Massachusetts Rate Setting Commission, July, 1976.

[2]Personal communication from Anne Shenberger, Health Services Specialist for the Commonwealth of Pennsylvania, July, 1976.

services ranged between $70.45 to $320.89 per registrant (mean $162.41).[3] The reports also indicated that the more expensive projects were more involved in coordination and consultative activities with schools, Head Start programs and other agencies. From this view, clearly children's needs and the resources available to them within their own community must be used to establish which system can and will meet health related costs of healthy and safe day care operation.

Impact on Day Care Supply

There is no systematic methodology available for assessing the impact of our recommendations on day care supply. We believe, however, that agressive federal leadership and support will motivate states to reorganize the confused process by which day care programs are now regulated. If that occurs, there is likely to be a sudden (and needed) growth in the availability of day care supply.

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3. "Minnesota Systems Research, Inc." Performance Profile, April-June, 1974, p.3.

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APPENDIX A

Outline and Plan

Submitted to HEW

For the Preparation of this Report

THE MEDICAL COLLEGE OF PENNSYLVANIA AND HOSPITAL

3300 HENRY AVENUE • PHILADELPHIA, PA. 19129

215-842-6545

Department of Community
and Preventive Medicine

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March 3, 1976

Request for Contract: Federal Regulation of Health and Safety in Day Care

RATIONALE

Ever since the post World War II inception of Federal funding for day care for young children, many concerns have been expressed about health and safety risks in day care by the medical and child welfare communities, as well as by the general public. However, very little documentation has been furnished about which risks, if any, can be described by objective data. Although there is an emerging body of information about generally prevalent health and safety risks to young children, there has been little attempt to (1) separate "hard evidence" from assumptions about health and safety risks (2) pull valid information together and (3) usefully link such information, where relevant, to health and safety concerns that are applicable to day care for young children. This attempt is vital to any review of the appropriateness of Federal standards for day care.

ABSTRACT OF INTENT

We are requesting a contract in order to draw upon individuals in possession of or with access to statistical information, validated research and/or considerable program experience across a variety of health and safety areas, and in order to use their knowledge as a basis for formulating recommendations about appropriate Federal standards. The consultants to the contract effort would (1) offer information relevant to their perspectives, (2) help us integrate their information into a perspective of appropriate Federal standards that would minimize what we know to be risks and (3) help us develop these concepts into a report with recommendations that can be delivered to HEW before summer.

CRITICAL QUESTIONS

Participants will be invited on the basis of (1) their knowledge of a particular area and the relevant literature in that area; and/or (2) their overview perspective and ability to integrate multiple approaches to the various areas. All participants will be asked to address the following specific questions:

1. What do you now <u>know</u> in your area about the risks to young children in day care? (Please distinguish specific knowlege from what are commonly presumed to be health and safety risks in day care). Please document your knowledge by providing and citing primary data (from the original source) wherever possible. Consider whether the health and safety concerns of day care differ for:

   a. different age children

b. different child care arrangements (eg. large versus small, rural versus urban, one story versus multi-level, renovated versus new, centers versus homes, differing structural and design features)

c. different socio/economic groups

d. different ethnic or racial groups

e. males versus females

f. programs which integrate children with disabilities with children without disabilities

g. programs which serve only children with disabilities.

2. What kinds of actions can be taken to prevent or minimize these risks?

a. Levels of Control

(1) Is there a "better way" to control health and safety in day care?

(2) What should be the goal of health and safety standards for day care?

(3) At what governmental level do standards already exist?

(4) At what level should standards be promulgated to control the quality of day care?

(5) What health and safety controls for day care should be written into Federal regulation?

(6) Does the content of the current Federal Interagency Day Care Requirements or of the 1972 Model Licensing Code reflect important issues to be regulated?

(7) How should standards be written?

(8) How should standards be measured?

b. Program Characteristics

(1) Are there staffing characteristics required to achieve health and safety standards?

(2) How do operational hours affect health and safety issues in day care?

(3) What health training should be required of day care staff, if any?

(4) What health education is relevant to the beneficiaries of day care (family and child)?

(5) How should the special communication issues involved in dispersing and receiving health and health program information among parents, day care program, health providers and/or consultants

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(6) Are special provisions required: (a) when infants are in care? (b) when toddlers are in care? (c) when preschool children are in care? (d) when school-age children are in care? (e) when mixed age groups are in care? (f) when children with disabilities are integrated with children who do not have disabilities? (g) when a day care program serves only children with disabilities?

3. What would be the impact of implementing recommended actions on:

   a. Costs (start-up versus on-going)

   b. Availability of day care service

   c. Monitorability of day care in any given community

   d. The local communities themselves?

4. What recommendations would you make for gathering further input and information which relates to the answers to the above questions?

PROCEDURES (See proposed schedule for outline and time correlations)

Background materials recommended and provided by experts in health and safety will be gathered for distribution to participants in the work session and for subsequent use in drafting the report.

All participants in the work session will be expected to do a relevant literature search in their area of expertise, to review the background materials distributed to them and to participate in the work session at which their findings and recommendations will be discussed. Those work session participants whose positions do not provide subsidy for this effort will be provided with a stipend and travel expenses where necessary. HEW Planning and Evaluation staff will also be invited to participate in the work session. From the results of the work session and the collection of background information, an Interim Report will be written by Peggy Pizzo, an experienced consultant/writer in the fields of child day care, child health care and related fields. (See enclosed curriculum vita) All participants and additional knowledgeable experts (including HEW staff) will be asked to review and comment on the Interim Report. From these comments, Ms. Pizzo will prepare a Final Report, which will be submitted to HEW by summer. The entire process will be supervised by Susan S. Aronson, M.D., Assistant Professor, Department of Pediatrics/Community and Preventive Medicine at The Medical College of Pennsylvan who has had extensive experience in the fields of child health and day care (see enclosed curriculum vita).

LIMITATIONS ON THE SCOPE AND COMPLETION OF THE PROPOSED WORK

In spite of the limited time and financial resources available, a decision has been made to propose a wide-ranging effort. It is expected that some areas will be addressed more completely than others. Some of those individuals listed in the proposal as sources of input may provide background materials only or act as referral sources to other individuals who will be able to contribute. Others may act as reviewers of the Interim Report only. Still others may be identified to HEW as potential reviewers of the Final Report or as sources of further information or expertise to expand and fill out areas which are incompletely addressed in the Final Report.

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LIST OF POTENTIAL SOURCES OF EXPERTISE IN RELEVANT AREAS OF CONCERN

Nutrition

Margaret Glavin, Grace Ostenso, Fred Shank, – U.S. Department of Agriculture

Commentary on Child Care Feeding Program Regulations for the School Lunch & Nutrition Act (comment deadline Feb. 15, 1976)

Jackie Pope, Food Research Action Center, New York City

Barbara Bode, Children's Foundation, Washington, D.C.

Robert Greenstein, Community Nutrition Institute (CNI), Washington, D.C.

Hector Correa, Graduate School of Public and International Affairs, University of Pittsburgh, Pittsburgh, Pa.

Dental Health

Patricia Cormier, U. of P. School of Dentistry, Philadelphia, Pa.

Mental Health (Services & Consultation)

Kuno Beller, Department of Psychology, Temple University, Philadelphia, Pa.

Administration of the Health Component (including records, forms, policies & procedures required)

Susan Aronson, The Medical College of Pennsylvania, Philadelphia, Pa.

Emergency Evacuation & Disaster Planning

Ed Koza, Fire Prevention Division, Philadelphia Fire Department, Philadelphia, Pa.

Defense Civil Preparedness Agency, Department of Defense, Washington, D.C.

Preventive & Remedial Medical & Dental Health Services

A. Frederick North, Division Maternal & Child Health, U. of Pittsburgh, Pittsburgh, Pa.

Dick Kearsley, New England Medical Center Hospital, Boston, Mass.

Albert Collier, Frank Porter, Graham Center, Chapel Hill, North Carolina

LIST OF POTENTIAL SOURCES OF EXPERTISE IN RELEVANT AREAS OF CONCERN (cont'd.)

Safety

The Information & Epidemiology Bureaus of the U.S. Consumer Product Safety Commission

Calvin Yuill, Retired, SW Research Institute, San Antonio, Texas

Environmental Quality & Sanitation

Kenneth Hohe, Chief, Institutional Facilities, Pa. Division of Housing and Institutional Environment of Environmental Resources

Joan Filao, Vermont Office of Child Development

Gwen Morgan, Lincoln, Mass.

Liz Prescott, Pacific Oaks College, Pasadena, California and Anita Olds, Preschool Design Consultant, Cambridge, Mass.

Special Needs (Disabilities)

Betty Van Wyck, Children's Center, Biddeford, Maine

Ruth Sauer, Bank Street College Day Care Consultation Service New York, New York

First-Aid

Susan Aronson, The Medical College of Pennsylvania, Philadelphia, Pa.

Martha Ladger, U.of P. Center for Emergency Medicine, Philadelphia, Pa.

Transportation

Seymour Charles, M. D., Physicians for Automotive Safety, Irvington, N.J.

Department of Transportation, Office of Safety Programs, Washington, D.C.

Staff Health

OSHA

Susan Aronson, The Medical College of Pennsylvania, Philadelphia, Pa.

LIST OF POTENTIAL SOURCES OF EXPERTISE IN RELEVANT AREAS OF CONCERN (cont'd.)

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Health Education

Hiawatha B. Walker, Johnson City, Tennessee, Chairman
Public Health Education Section Council of the American
Public Health Association

William H. Creswell, Department of Health and Safety Education,
University of Illinois, Urbana-Champaign, Illinois

Clarence Fogelstrom, U.S. Office of Education

Use of Health Professional Consultants

Susan Aronson, The Medical College of Pennsylvania,
Philadelphia, Pa.

Dan Rosenn, McLean Hospital, Belmont, Mass.

General Information

U. S. Center for Health Statistics

American Academy of Pediatrics Committees on:

Accident Prevention
Environmental Hazards
Infant & Preschool Child
Nutrition

Peggy Thompson, Delaware County Family Day Care Homes

Bob Bookman, Cornell University, Ithaca, New York

Dick Kearsley, New England Medical Center Hospital

Louise Bowditch, Brookline, Mass.

Mary C. Howell, Child Health Station, York Corner, Maine

T. Berry Brazelton, Boston, Mass.

Dick Ruopp, ABT Associates, Boston, Mass.

Ann Peters, LoJolla, California

Winnie Parker, Boston, Mass.

ATTACHMENTS:

1. Tentative Schedule Format for Contract Proposal
2. Letter to Potential Sources of Expertise
3. Curriculum Vitae.

SSA/jbb

Susan S. Aronson, M.D.

THE MEDICAL COLLEGE OF PENNSYLVANIA AND HOSPITAL

3300 HENRY AVENUE • PHILADELPHIA, PA. 19129
215-842-6545

Department of Community
and Preventive Medicine

Dear

Your name has been suggested to me as a candidate for participation in the development of a concept paper on health and safety issues in day care. The development of this paper is being funded by the Office of the Assistant Secretary for Planning and Evaluation of HEW as a part of preparation for the congressionally mandated report on the "appropriateness" of the 1968 Federal Interagency Day Care Requirements and on recommendations for modifications of these requirements. Working with Peggy Pizzo, Consultant and Writer in the field of child day care, I have developed an outline of the issues and a basic plan for pooling available expertise (See enclosed materials). These documents have been submitted to HEW at their request for contract processing. If awarded, the contract will provide limited financing of per diem, secretarial travel and incidental expenses. Hopefully, participants who already have public roles can participate without cost to the contract. Private individuals may require reimbursement for time and travel expense.

The basic plan calls for the collection and distribution of background materials to participants who would agree to review these materials and the relevant literature known to them, in preparation for a single 1 day work session to be held in late April in a location of mutual convenience to all. Following the work session, Peggy Pizzo will put together an Interim Report to be circulated to all participants for comment, review and suggestions for revision. By mid June, a Final Report will be prepared and submitted to HEW.

Because of HEW's contract and reporting constraints, time is short to provide this important input. If you are interested in participating, please provide the information requested on the attached page and return it to me within 2 weeks or call me at 215-842-6543 (Office) or 215-MI9-2133 (Home).

Sincerely,

Susan S. Aronson, M.D.
Assistant Professor
Depts. of Pediatrics
Community & Preventive Medicine

SSA/jhb

Enclosures

Name _____ 201

Preferred Mailing Address _____

_____

_____

_____

Preferred Phone Contact Numbers

_____ (home) _____ (office)

Areas of expertise in which I feel able to contribute and critical questions to which I will address myself (see lists in attached outline submitted to HEW)

Critical Question Number	Health Component Area

Ways in which I would like to participate: (circle one or more)

Send background materials to help prepare others for the work session	Participate in the work session	Review and comment on the Interim Report	Review and comment on the Final Report

Preferred location of 1 day work session (circle number to indicate choice)	Washington	1	2	3
	Philadelphia	1	2	3
	New York	1	2	3

Preferred date for 1 day work session (circle number to indicate choice)	Wednesday, April 21	1	2	3
	Thursday, April 22	1	2	3
	Friday, April 23	1	2	3
	Saturday, April 24	1	2	3
	Tuesday, April 27	1	2	3

Financial support required in order for me to participate (circle to indicate choice)

Travel	Yes	No
Per Diem	Yes	No

APPENDIX B

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APPENDIX C

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